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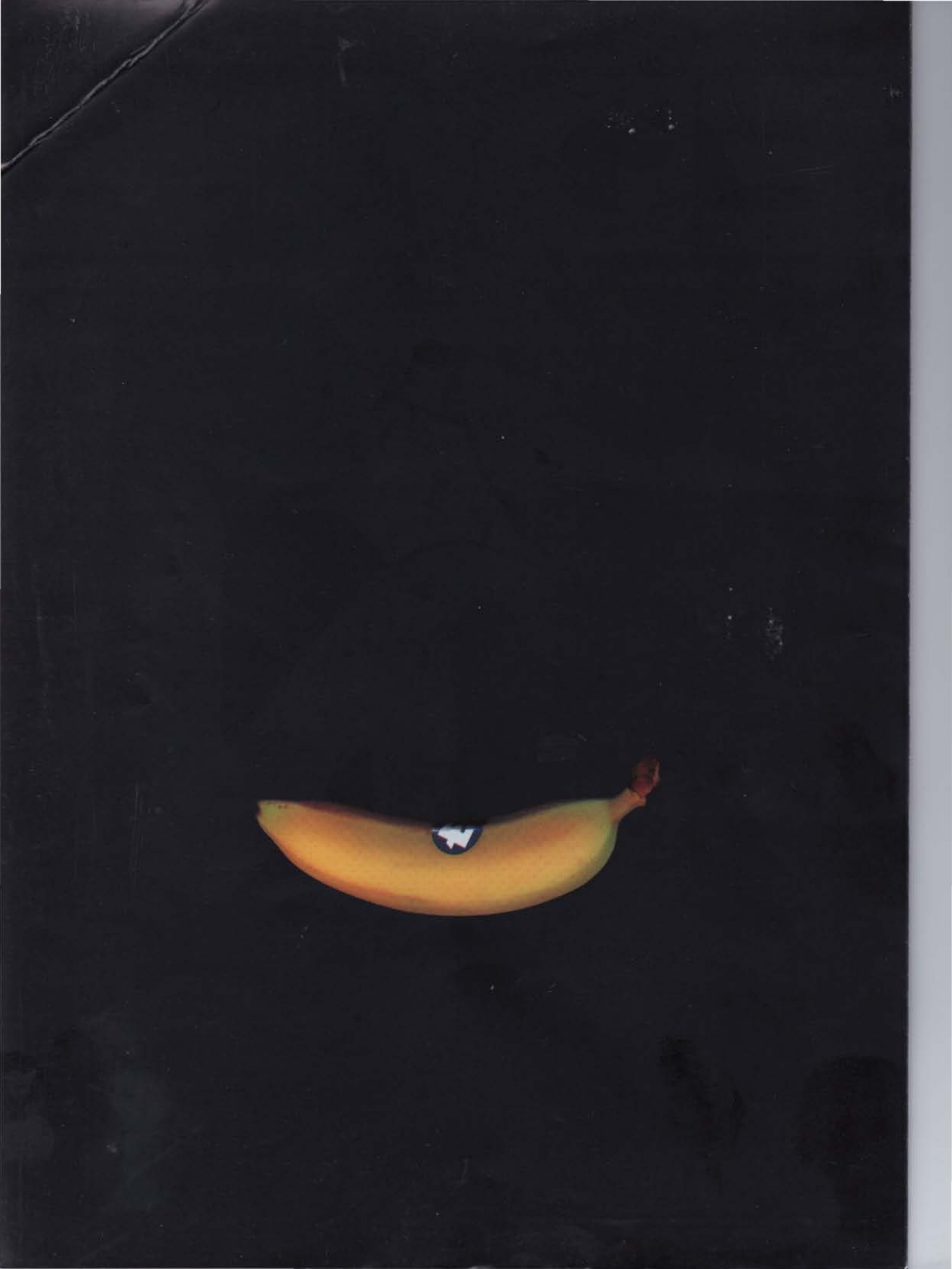


Issue thirty-five

N64: The Verdict

Nintendo's time for evangelising about reality immersion, dream teams and killer software is over. Judgment day has arrived for Nintendo 64. Edge reports from Tokyo on its Japanese launch, cites evidence for its impending fate, and delivers the lowdown on *Super Mario 64* and *PilotWings 64*

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Nintendo unleashes its 64bit weapon of destruction



It's almost six years since the very first Super Famicoms entered the UK on import, but few Nintendo fanatics will forget the magical moment they witnessed the first games running. The immediacy and yet almost limitless scope of *Super Mario World*, the breathtaking Mode 7 pyrotechnics and ambience of *PilotWings* – these were titles that inspired the imaginations of game players the world over. Games that reaffirmed Nintendo's unrivalled respect for the player.

To the chagrin of Nintendo loyalists, though, sequels never arrived for the 16bit Nintendo. Instead of milking its intellectual properties with hastily manufactured follow-ups, Nintendo held back and waited for its new technology to do justice to its lineage. It was a decision that **Edge** commends wholeheartedly – on every level. *Super Mario 64* and *PilotWings 64* represent an even greater leap in videogaming than their forerunners. These aren't mere sequels, they are videogame landmarks.

As expected, *Super Mario 64* goes way beyond all videogaming conventions. Spanning an incredible divide between gameplay innovation and technical excellence, it eclipses every other 3D platformer (and, arguably, any type of videogame) created so far. As an artistic achievement, it is staggering. Looking more like a professional cartoon than a game, its visual dexterity is unmatched. From a gameplay perspective, though, Nintendo has pulled off the impossible, representing a singularly perfect example of how new technology should enrich game design, not augment it superfluously.

Of course the most poignant element of the N64 launch is that with two of the greatest games ever created available from day one, what follows can only disappoint. Such is the price of perfection.

The Future is almost here...










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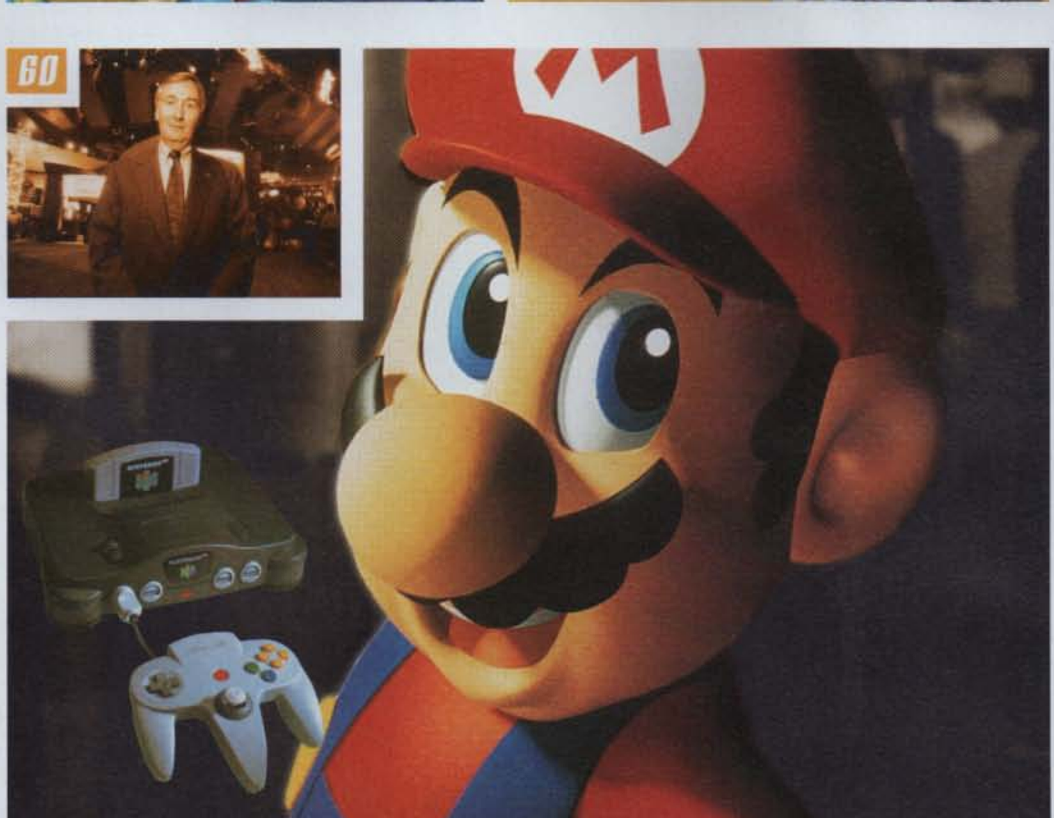
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insideview

The Tokyo Toy show (top, top right). *Super Mario 64* cart (inset). Bandai's Atmark player (above right)





Photography: Mark Koehler





Chris Crawford (top). *The City of Lost Children* (above)

The Darkening (top). *Super Mario 64* (above)



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Photography: Jude Edginton

Photography: Jude Edginton





REGULARS





The latest **news** from the world of interactive entertainment

Japan: **Nintendo** raises the gaming stakes

Nintendo's moment of truth arrives in Japan









Sunday June 23, Akihabara, Tokyo (top left). Queues form at around 10am for the Nintendo 64 (above although most had disappeared by lunchtime). Shop employees patrolled the streets with loudhailers announcing that all machines would have to be bought with *Mario*. Few needed persuading



As in the UK, queueing is a national pastime in Japan, but it would be hard to imagine this lot outside your local Dixons. Many stores provided playable Nintendo 64s a week prior to the machine's launch



This time, Nintendo didn't count heavily on the main electronics district of Akihabara

Nintendo's 64bit machine hit Japanese high streets on Sunday 23rd June. Unlike the Saturn and PlayStation's spectacular launches in late 1994, Nintendo's big day was a far call from sleeping bags and gas stoves that clogged the streets of Akihabara the night prior to 21 November 1990 when the Super Famicom was released. A few queues formed in Akihabara (the largest gathering of gameheads outside the giant Laox computer centre) but most were gone well before lunchtime.

This shouldn't be taken at face value though. According to retailer information Nintendo still managed to sell a commendable 250,000 on its very first day and deliberately avoided the street chaos that ensued six years ago (the story of one hapless Japanese game 'otaku' getting mugged for his newly purchased Super Famicom is part of video game legend). This was done by distributing its machine through a far wider retail network. Instead of just games shops and toy stores stocking the N64, this time Nintendo made its machine available at convenience stores throughout Japan and had already allowed for hundreds of thousands of pre-release bookings. In other words, this time it was prepared for a sell-out. Incidentally, **Edge**'s intrepid reporter did notice that the queues that formed were composed of not only Japanese but also a fair few Europeans with wallets stuffed full of Yen. Nintendo shopping etiquette prevented anyone buying more than one unbooked machine per head, no doubt before they made a hasty departure for the nearest Federal Express office.

As well as Nintendo making available 300 000 N64s available on day one, it also shipped enough copies of *Super Mario 64* to allow for one per machine. Early sales reports indicate that, unsurprisingly, everyone that bought the machine also picked up a copy of Mario (in fact, most shops would only sell the machine if the game was being purchased, and vice versa) with 60% of the early adopters plumping for *PilotWings 64*, too. The only other game available on day one was a Japanese chess (Shogi) game from third party developer Seta (echoing the release of the obscure Bitmap Brothers Amiga platformer *Bombuzal* during the launch week of the Super Famicom).

Nintendo's sales plans are ambitious for the Nintendo 64. By the end of June it plans to sell 500,000 units and then an additional 500 000 units will ship in July and a further 500 000 units in August (totalling 1,500 000 by the end of August). Equal numbers of *Super Mario 64* will be released to satisfy demand. Most significantly, the company has announced that it will manufacture five million units by the end of March 1997, with Nintendo planning to sell 3.6 million of those units of N64 in Japan and 1.4 million unit forecasted for sale in

Continued next page

What is it?

This Mancunian indie-pop star recently took part in a live Internet interview, where he answered questions from fans all over the world. At least that was the idea. Unfortunately 5,000 Net users tried to log in simultaneously and the server crashed



Japanese software

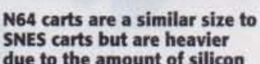
Nintendo will announce 20 titles in July for the Nintendo 64. These will include *Top Gear Rally* (above) and *Blade and Barrel* from Kemco, *Cu-On-Pa* (aka *Endorfun*) from T&E Soft, *Bomberman 64* and *Super Power Rider 64* from (Hudson Soft) and several titles from Imagineer, including a cute polygon baseball game.

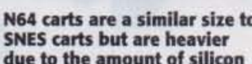




Two reasons to buy a Nintendo 64 (the only ones). Nintendo's packaging mimics that for the Super Famicom – the cardboard game boxes are slightly fatter and wider







N64 carts are a similar size to SNES carts but are heavier due to the amount of silicon

Continued

the US. To illustrate Nintendo's bullishness, it has taken Sony eighteen months to sell 2.5 million PlayStations into Japan. Even is Nintendo does manage to shift this many N64s, it will still have its work cut out competing with the number of Super Famicoms sold to date - a staggering 16 million units.

The bad news is that it seems Nintendo 64 will not be making its UK debut this year. In a recent business meeting with Tokyo analysts, NCL chairman Hiroshi Yamauchi conceded that their would be no units distributed into Europe during 1996. This must be especially uncomfortable news for exclusive UK distributor THE Games who had pinned their hopes on getting hold of PAL machines before Christmas ('late fall' according to NOA's Howard Lincoln). Eager Nintendo proselytes who have pinned their hopes on getting hold of a Nintendo 64 this year will now either have to continue being patient or trade in the car to stump up the cash to pay for an imported machine...

Quite how Nintendo's Japanese strategy will be played has been speculation until recently. Shortly before Edge went to press chairman Yamauchi recently declared that 20 games, to be released in Japan before the end of the year, would be announced in July. He also made the point that only three of these could possibly get close to reaching the quality of Super Mario 64. In light of the number of filler titles on their way (Time Warner's Endorfun, retitled Cu-On-Pa and to be released by T&E Soft) this implies that Nintendo will be counting on its own internal development highly...

Those who have only previously seen the machine in photos (anyone outside of the industry, basically), will probably be surprised out how petit the Nintendo 64 is - measuring just 23 cm in width, 18 cm from front to back and 4.5 cm in height - probably due to the fact that there is no CD drive to accommodate. It also looks rather plasticky, with big, chunky joypad ports and a large on/off switch. It is clear that, unlike the 32bit machines, the N64 has not been designed with lifestyle pretensions, aimed at 20-30 year olds, but as a functional gamebox.



A cursory glance at the machine reveals that the power pack is a separate unit that slots into the back of the machine. There is also a 'jumper pak' inside the console memory expansion slot which has 'do no remove' written on it. **Edge** suspects this slot will be for the proposed RAM cart peripheral which may be used to give extra memory support to the 64DD when it is released, most likely next year. Incidentally, neither *Mario* or PilotWings uses the memory card which was also on sale (these games both include battery back-up). This was sold almost exclusively with Seta's Shogi game.

Like the machine itself, the cartridges are surprisingly small, around the same size as SNES carts, and they also come in the familiar SNES cardboard packaging. **Edge** has yet to open up the carts to see if Nintendo's claims of 64Mbit ROMs are true. Considering the immense graphical variety in both titles, rumours that Mario is, in fact, 96 Mbits are unsubstantiated...



The ¥1000 controller pak (memory card) was sold in most stores with the Shogi game

What is it?

Liam Gallagher of Oasis. Apparently, in a previous Internet chat, the most popular question was, 'What's Patsy Kensit like in bed?' The northern songster, who can usually be relied upon for a foul-mouthed outburst, failed to comment

Buying an imported Nintendo 64

Edge called various companies offering imported versions of the Nintendo 64 and found the average price at the time of going to press to be in the region of £600-800 (including either one game or two). Given that the cost of the machine plus both Super Mario 64 and PilotWings games in Japan is just ¥44,600 (£270) this might seem extortionate, but bear in mind that because of the difficulty with dealing directly with Japanese distributors, most companies are importing machines via Hong Kong where wholesalers traditionally take a large margin on exports to the UK. Once shipping, VAT and import duty are all taken into consideration, it's currently difficult for companies to import the Nintendo 64 and its initial brace of games for much less than £500-600.

The Japanese Nintendo 64 has a single SNES-compatible 'Multi-out' socket and sells without a video cable (simply because the company knows that its buyers will already have a Super Famicom and required cabling). This accepts every type of SNES lead except RGB Scart (it seems Nintendo has rewired the RGB pins possibly to temporarily curtail the European import market). Those wishing to buy a machine on import should therefore be concerned with the following details: the signals outputted by the machine are composite AV and S-Video. Both these signals are native NTSC signals and will only be appear in colour on UK TVs that can decode NTSC colour. Many manufacturers now include such circuitry in their TVs with most new stereo Sony TVs being a good bet. Failing that, it's possible to convert an NTSC signal to PAL with a converter that accepts a composite (standard yellow phono plug) input. Datel have marketed such a device for a while and some importers stock other models that require a Scart plug input. It's likely that it won't take long for companies to make up custom RGB Scart leads for the Nintendo 64 once the pins on the Multi-out (if they indeed exist) have been established.

With the US launch scheduled for the Autumn (and the UK launch now delayed until 97) it's debatable just how many Japanese N64s will sell into the UK. **Edge** predicts that after clapping eyes on Mario, few will delay in arranging the overdraft. You have been warned.



The only N64 cables available in Japan are composite (top) and the superior S-Video

Matsushita turns up heat on **M2** technology

M2
64 BIT

'Uncomfirmed reports' from Japan fan the fires of hype

The evolution of M2, from Trip Hawkins' dream project to a clandestine Matsushita concern, has taken a new twist. The latest rumours to surface in Japan indicate that Matsushita is planning to incorporate not one but two of The 3DO Company's PowerPC602-based chips within the M2 hardware, which would easily push the system's performance above one million polygons per second – a figure currently associated with Sega's Model 3 hardware powering *Virtua Fighter 3*.

The manufacturing cost of these chips alone is estimated to be $150, which has led many industry observers to speculate that Matsushita was planning to launch M2 at a price in excess of $500. Compounding this prediction of a high pricepoint is the popular notion that Matsushita is rumoured to be incorporating a DVD player into the hardware (as the world's biggest consumer electronics manufacturer, Matsushita is also betting heavily on DVD's adoption into mainstream households – M2 could be a key vehicle in delivering a payoff).

However, to counter this potentially damaging speculation (Matsushita is all too well aware of what happened to the last game machine priced over $500) sources within the company soon leaked news that M2's intended pricepoint would be no more than $300. Quite how this will be manageable (if the proposed technical specifications remain intact) has not been revealed, but it does seem as if Matsushita is in no rush to bring M2 to market (perhaps waiting for some manufacturing breakthrough to reduce costs) and it has to be assumed that the electronics giant still has some powerful cards to play.

Meanwhile, with a software development plan still under discussion, many software developers seem to have given up waiting for M2 to arrive. Interplay (originally touting games such as *Clayfighter 3* for M2) has put its M2 development on ice, preferring instead to focus on Nintendo 64 development. A source inside Interplay commented, 'Some of the M2 work will be used for the Nintendo 64 project. At the moment no-one is sure what Matsushita's plans are so we have decided to put the project on hold for a while.'

Expect more details to surface on M2 over the coming months.

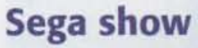


Incorporating two PowerPC chips (above, centre), M2 should really fly



What is it?

This Danish company, responsible for creating one of the best toys ever, has just opened up a theme park in Windsor and is now moving into the computer industry. The firm plans to invest around $2m in videogames based on its famous product.



Sega show

Adopting the roaming beat 'em up gameplay of titles such as *Streets of Rage*, *Final Fight*, and classics like *Double Dragon*, Sega's new ST-V-based *Dynamite Keiji* (*Inspector Dynamite*) was revealed to **Edge** at a private showing in Sega's HQ recently.

Instead of flat, parallax scrolling backgrounds the game employs 3D to keep the action going in all directions. The plot mirrors those of the *Die Hard* movies (if there was indeed a plot in those movies) – you are trapped in a building where a crime is taking place. The usual selection of moves and weapons are available (knives, guns, missile launchers, etc).

Although not graphically stunning, this game should prove popular with Saturn owners when it gets the translation treament, if not necessarily arcade goers.





Industry **giants** form Satellite **alliance**

Microsoft
Nintendo

Two of the biggest names in the computer industry, Microsoft and Nintendo, have joined forces with the Nomura Research Institute to provide a new online service in Japan. The service will work via satellite, rather than across phone lines, meaning it will be significantly cheaper than standard Internet access.

This is not Nintendo's first foray into the world of satellite information projects. Last year the company released Satellaview: an add-on for the SFC which exploited the St GIGA satellite channel and employed custom hardware facilities to provide downloadable educational and leisure software.

Like the Satellaview project, much of the information on the new sat net will be provided by Nintendo but various other entertainment companies are expected to contribute to the content. The service, which will be available through subscription, is set to go online in the middle of next year, although it's not known if the N64 fits into the plans.

Meanwhile, following the news that Sega of America is planning a modem peripheral for the Saturn (page 10), Sega Enterprises in Japan has now announced that it will release a modem for the machine in July. The 14.4K modem, together with software, will cost around £100.



Nintendo's Satellaview was the first of a high-profile Net initiative



Sega strengthens Saturn at Tokyo Toy Show

Sega dominates once more at the premier toy event

What is it?

Lego, whose simple building blocks kept kids entertained for hours until videogames came along and turned previously creative children into talentless, antisocial wasters. *Adventures on Lego Island* will be released next year



Bandai's Sufami Turbo enables SNES owners to use the company's new range of smaller, cheaper carts and to link up via the dual port (centre). AM2's Yu Suzuki introduces one of VF3's new characters, sumo wrestler Takaarashi (right)



Power Rangers are still big in Japan, and known as Dinosaur Task Force Zyurangers

Spread over three days at the start of June, this year's Tokyo Toy Show (the Tokyo Omotcha) was a slight disappointment compared to previous events. Although mostly dedicated towards toys, one quarter of the show covered videogames, the event's typical absence of Sony and Nintendo meaning Sega stole the show with relative ease.

The majority of Sega's booth concentrated on Saturn releases. Top of the list was the half-complete Saturn version of *Fighting Vipers*. AM2, which undertook the conversion, has employed Gouraud shading to smooth any rough polygon edges, giving the game a neat graphical edge. Less smooth, however, was the camera motion, which didn't quite match the speed and fluidity of the coin-op - most noticeable was the slowdown that occurred when a player is KO'd. However, considering *FV* is only 50% complete, AM2 seems to be doing a first class job - by comparison, at this stage of development the incredible *Virtua Fighter 2* conversion was of a similar quality.

Virtua Kids, the *VF2*-derived beat 'em up featuring super-deformed fighters (child-like characters with enlarged heads) was also present. The coin-op conversion was 100% faithful - unsurprising considering the original was developed for Sega's Saturn-based ST-V coin-op technology.

Virtua Cop 2 was also on display, and appears to be near arcade perfect, as was the original. In a similar plan of attack to Saturn *V-Cop*, Sega is planning to implement either bonus stages or training stages to add longevity to the home version.

From thirdparty developers, Climax's 3D arcade adventure, *Dark Saviour* (see **E**32), probably made the biggest impact. Also on display was *Shinrei Jusatsushi Taromaru*, an attractive Shinobi-type game with dark but splendid 3D backgrounds.

Making a special appearance was **Yu Suzuki**, discussing the forthcoming *Virtua Fighter 3* (see **E**31). Two new characters will be introduced for the game soon, but unlike the new *VF2* fighters (Lion and Shun Di - both non-Japanese), the new combatants will have a traditional Japanese look. One will be a girl wearing a kimono.





Namco's stand included a gigantic *Galaxian*³ exhibit and more *Tekken* 2 promotions









Sega chairman Hayao Nakayama (far left, centre in shot) made a rare appearance. Sega's Net Link peripherals proved popular, as did an early version of Fighting Vipers (left) and its arcade-quality joyboard

DATA stream

According to Romtec, *Microsoft Word's* share of the worldwide word processing market, first quarter '96: **80%**
Number of times the Pentagon's computers were infiltrated by hackers last year: **160,000**
Cost of looking after an average teenager: **£24,627**
Cost of looking after a teenager with a 'stylish social life': **£66,990**
According to Institute of Management Development, Britain's place in global top 20 of economically competitive nations: **19**
Chile: **13**
USA: **1**
Cost of Sony's new marketing campaign, having ditched its mildly amusing but not particularly effective SAPS concept: **£900,000**
Amount of photos taken each year world wide: **60 billion**
According to Dataquest, number of PCs sold in the UK in the first quarter of '96: **866,200**
Price of a can of that luxurious and exotic western delicacy Heinz Baked Beans in Russia: **50p**
Number of Apple Macs currently in use worldwide: **19m**
Mission:Impossible gross box office takings in its first 12 days in the US: **$107,154,708**
Konami profits for the fiscal year '95-'96: **¥3,200m**
Percentage of Internet surfers who are male: **69%**
Age at which Paula Yates was potty trained: **five years**
Amount of British males who have cross-dressed at least once in their lives: **25%**
Number of people worldwide who are likely to regularly use the Internet by the year 2000: **500m**
Number of Game Boys sold worldwide: **48m**



Capcom's cute kiddy range of coin-ops (above) got Edge's vote. These played a selection of older CPS PCBs such as *Mercs* and *Strider*

the other a sumo wrestler, who at the moment goes by the name of 'Takaarashi' (it is likely this will change by the end of development). According to Yu Suzuki, the main difficulty AM2 is having with the new character is his movement – because of Takaarashi's immense size he looks ridiculous when squaring off against other fighters. To compensate, AM2 is giving him traditional Sumo moves, such as the ability to ring out the opposition with his sheer strength. However, AM2 are currently redesigning the character, since his current height (stretching toward two metres) exceeds even the massive Jeffry, and it is unclear how fat he should be (apparently, if he has 10 centimetres of fat surrounding his stomach any beating he takes will not appear to have as much impact).

For advanced gameplay, *VF3* is aiming for a more strategic approach to each bout. From what Suzuki said, it appears that each blow will be affected by all previous hits. So, if a player adopts a simple strategy of always kicking the opponent, the game will compensate for this repetition by making subsequent kicks less powerful. Aiming for specific parts of the body will also affect the amount of damage scored (although **Edge** shudders to think what particular body parts will be regarded as sensitive spots).

The difference between each character's fighting technique is also likely to be exaggerated, and fights will be less linear than current versions, with contestants utilising the entire arena space.

Demonstrating Sega's enthusiasm for multimedia, the Saturn's Net Link modem was introduced at the show. Running at 14.4K/s and costing ¥14,800 (around £90), the modem comes bundled with connection software, a Net browser and a connection to Nifty-Serve (a Japanese Net server similar to America Online in the States). Also introduced were Net accessories – a disk drive, keyboard and a media card which acts as an interface for games to be played over the Net.

Sega also introduced its X-Band online service, accessible via the Internet or Nifty-Serve. From here gamers will be able to select one of six network Sega games – *VF Remix, Sega Rally, Daytona USA, World Series Baseball, Virtual-On* and *Bomberman*. Whether it will be possible to actually download games, or whether the site is simply restricted to network play, in a similar vein to BT's *Wireplay*, will become clear later in the year.

Clearly Sega's support for the Saturn is expanding to other areas than just coin-op conversions and original developments such as NiGHTS. With the two other big guns in videogaming not making an immediate entry into the Net-orientated market, Sega could gain a well-deserved foothold. ■



Companies showing off home VR such a Takara revealed technology akin to watching TV with a silly helmet on

Sega channel

Now claiming a difficult-to-believe 91% share of the fast-fading 16bit market, Sega has announced what will surely be the last push for the Zimmer-bearing Mega Drive, in the shape of the Sega Channel. Working with various cable TV companies, Sega will beam any of 25 current and back-catalogue games (the selection changing each month) directly into a massive cartridge plugged into the MD's cart slot for a flat subscription fee of £10 a month. The most interesting element of the venture, though, will be the pre-release versions of new games (starting with the pretty-looking *Sonic 3D*) subscribers will be able to play up to two months before the street date, in effect the first ever cartridge-machine game demos. Sega claim to be committed to producing new Mega Drive software, but with everyone else jumping ship, how long this will last is debatable.







From top: Bandai's Atmark Pippin Player, a *Lunar* lovely, and a typically odd exhibit



'New Amiga' prepares to kill Mac/PC

Two PowerPC chips plus Mac-like ease-of-use equals a killer PC

A new high-spec computer is being hailed as a nineties version of the Amiga. Incorporating two PowerPC chips running in parallel, built-in networking protocols, MIDI, and industry-standard expansion slots, the workstation is seen by some industry speculators as the future of modern computing.

Created by ex-Apple employee, **Jean-Louis Gassée**, the BeBox has already been making waves with its potential for games development - a flight sim featuring realtime Gouraud-shaded landscapes and aircraft and a 3D *Descent*-style game being early releases. Both games take full advantage of the BeBox's hardware (two built-in joystick ports and four serial ones) and operating system (multi-threading, pre-emptive multitasking with built-in networking) - features which gave the Amiga such a loyal following.



Jean Louis Gassée, founder of Be, left Apple dissatisfied with the company's plans

Due to the versatility and power of the hardware (the basic setup incorporates two PowerPC 601 chips running at 66MHz, with 16Mb RAM and SVGA video), it is possible to launch the same game twice and play against a friend on the same BeBox, using just one screen, via its built-in networking. To prevent two game windows overlapping each can be resized in realtime, via standard Mac-like drag tools, while the game continues to play in the background.

Whether the BeBox impresses consumers as much as it has some industry insiders remains to be seen, and Gassée's sales policy doesn't particularly inspire: 'Before we let you use the BeBox, we believe you must have some aptitude towards programming - the standard language is C++. Also, you must have a Net connection and at least $2,500 for a basic-spec machine,' he told **Edge**.

Nevertheless, with Java and VRML being added to the list of features as standard, the BeBox, if successful, could represent a minor threat to the vast PC market.





The BeBox has been hailed as the computer into which the Mac was supposed to evolve. Multiplayer games can be played across the BeBox's internal network, on the same screen (above)

Gassée formed Be in October 1990, leaving Apple after becoming dissatisfied with its treatment of co-founder and Mac guru, **Steve Jobs**. With investors such as **Seymour Cray** and AT&T behind him, Gassée started development on the BeOS, an operating system which he hoped would rekindle the simplicity of the original MacOS while avoiding the overtly tiresome nuances of Microsoft's *Windows 95*.

The BeBox is still awaiting a 'killer app' - essential to the success of any new hardware. Gassée believes he has the answer: 'We made this unit because nobody could support our OS. However, we are now selling the license for $50.'

With 1,500 registered developers, the BeBox could find itself as big as, if not bigger than, the Amiga was during the eighties computer boom.







Although basic in terms of graphics, this *Descent*-style game (above) indicates the BeBox hardware's potential and also its ability to supply multiplayer gaming experiences. With two high-end PowerPC chips running in parallel, the BeBox's power cripples modern Macs and PCs

Apple Internet

If Netscape is the shark in the Internet ocean, Apple is certainly the pilot fish. Edge looks at two companies in symbiosis



Apple CEO Gil Amelio could turn around the troubled company's fortunes with his new Internet strategy

With the first 100 days of his reign completed, Apple's new CEO, **Gil Amelio** has revealed his plans to help turn around the troubled company. The changes in Apple's marketing strategy are many, including swinging cuts in the range of machines offered, but probably his most significant action is in repositioning the Cupertino-based company in relation to the Internet. Simply put, Apple has now made the Internet the focus of its long-term development and business efforts and is busy restructuring its organisation to that end.

Chief amongst the raft of announcements to come out of the recent Worldwide Developers Conference in San Jose, California, is that by the end of 1996 all Macintoshes will be sold as Net ready; shipping with 12Mb RAM as standard and the *Apple Internet Connection Kit* CD-ROM. The *Kit*, already available with several models, is designed to extend Apple's famed ease-of-use to Internet connection, containing latest versions of *Netscape*, *Claris Emailer Lite*, *Newswatcher* and the *Adobe PageMill* Web authoring software on disc. In the UK, an additional arrangement with Pipex (the default setting) also enables new users to connect quickly to a service provider.

Apple's other hardware platforms are also being ramped up to Net readiness, with the beta version of the Newton Internet Enabler being released to developers promising full TCP/IP support for the under-performing PDA. The full suite of standard Internet protocols such as SMTP, HTTP and HTML should be fully supported and much use is being made of the term 'wireless' in conjunction with future Newton developments.

It's likely that Pippin also will be repositioned. Though speculation about it's possible adaptation to a Network Computer (NC) reference platform has long been denied, the announcement by Apple, amongst others, of the NC Reference Profile 1 seems to have altered this attitude. Bandai's Pippin-based Atmark – which has reportedly shifted 16,000 units in its first week of sale in Japan – already comes bundled with a 28.8K/s modem and full support for a keyboard. All that would be required to turn it into a fully fledged NC would be a Java run time engine and it's likely future marketing strategies will concentrate on that fact.

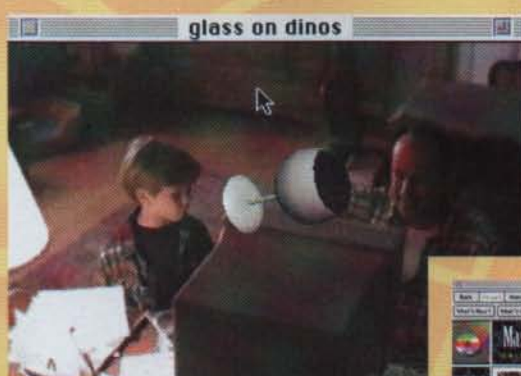
With partnerships with Sun for Java, Netscape for HTML browsers, Adobe for Type and SGI amongst others for VRML, Apple is pushing hard on the software front, too. *QuickTime* is probably the jewel in its crown, being responsible for over 50% of video delivery on the Internet as a whole.

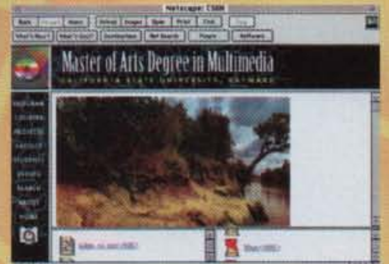
The forthcoming *QT 2.5* will increase the program's already impressive versatility even more and provide 640x480 playback at 30fps. New features include an API to capture a text track (meaning that video clips can be returned from search engines), MIDI file playback and an API allowing any instrument to be plugged in to *QT*'s software sound synthesiser. A recent licensing agreement with Netscape also means that a *QuickTime* plug-in will be included as standard with *Netscape 3.0*, currently in beta stage, further increasing its likely dominance.

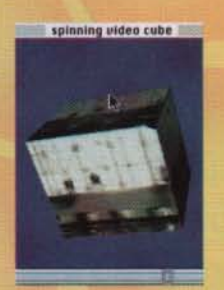
Whether Amelio's refocussing will reverse the company's recent misfortunes is unknown but Apple is actually well placed to take advantage of any paradigm shift to the Internet. Although its global market share in the general computer market hovers around the 10% mark, for Internet specific applications (servers, browsing and content creation) that figure jumps up to 21%. The real crux, though, will come with the introduction of the object-oriented *OpenDoc* architecture. If Apple's next generation OS due early next year (after which future OS changes will apparently be incremental only) and their new Internet access suite *Cyberdog* can truly shift seamlessly from the desktop to the Net as claimed, then Apple's fortunes could really be on the upturn.



Bandai's Pippin Atmark – part of Apple's continuing Internet onslaught







Apple's new *QuickTime* technology, which includes 3D (right) and *QuickTime VR* (centre) will be included as standard with *Netscape 3*

Planet Net

A new service provider, with a philosophy of 'putting the customer first' has started. Planet Internet, which gives subscribers free online access via an 0800 number, (once the monthly and access charges have been paid) is working in conjunction with *Netscape 2.0* to bring its users 'The Best of the Net'.

The service is separated into five sections – 24 hours a day online news, the latest sports results, music and movies, sites dedicated to children, and gaming sites, be they online or simply download URLs.

'Planet Internet will always put the customer first,' said consumer marketing manager, **Mikah Martin-Cruz**. 'The introduction of the 0800 offer is tantamount to that philosophy and we will continue to challenge the parameters of what has been portrayed as an out-of-touch, overly technical industry and lead the Internet into the mainstream media.'

For subscription details contact Planet Internet on 0550 345400, or access **http://www.pi.net**.

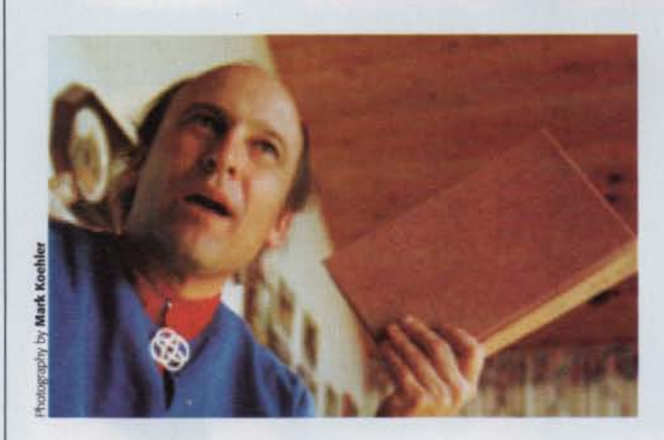
More info...

Apple software

Beta versions of both *Cyberdog 1.0* and *OpenDoc 1.0.4* are available from **http://cyberdog.apple.com** and **http://opendoc.apple.com**

The way games ought to be

Hi-octane games theory by Chris Crawford



Photography by Mark Koehler

Number 6: Barrels O' Fun

Why are videogames so obsessed with life and death? In reality, you only get one chance, and trial and error isn't an option. **Chris Crawford** speculates over the flawed designs of videogames

Let us consider the games playing process as a story-generating process. That is, a game is a machine that grinds out a custom story for the player in each playing. Now, most games generate insipid stories that few would compare with hand-crafted stories. In this essay I will not ask how we might correct this problem. Instead, I propose only to examine the games playing process as a sequence of stories.

I shall use as my working example (once again) *Doom*, for the same reasons that I have used it before: almost everybody has played the game and so most people are familiar with it. Moreover, I have praised the game design, so I need not waste anybody's time on the diplomatic niceties.

The example I'd like to focus on is in *Doom II*, in a level called 'Barrels O' Fun'. This is a particularly clever level, because there are two places where sets of barrels are set up to explode in a chain reaction that will kill the player if he doesn't find shelter. OK, that's clever. But consider the precise sequence of stories that the player must go through to win this little scenario...

Story #1
Well, here I am in a new level called 'Barrels O' Fun'. It sounds interesting. I see lots of barrels all around me. I'll very carefully just look around and... Oh-my-god, I must have tripped a secret latch. A door has opened and I can hear the growl of a monster! Hey, he just shot at me and a barrel blew up! Now more and more barrels are blowing up! I'm dead!

Story #2
OK, this time I'm ready. I know that as soon as I move more than a couple of steps, I'll trip the secret latch and the monster will come. So this time I'm going to get him first. I'll just face in the correct direction and edge closer... closer... Yes, there he is! But there's a barrel between us! If I shoot, I'll set it off! Oh no, he's shooting, the idiot! The barrels are exploding! I'm dead!

Story #3
Well, I'm not sure what to do, because I can't shoot back and I can't seem to escape the exploding barrels. But I do notice an empty space where there aren't so many barrels so I'll just duck into that. Whoops, here comes the bad guy... now the barrels are blowing up. Argghh, there are still too many barrels. I'm dead!

Story #4
I don't know what to do. There appears to be no way out of this. But this is a long, long room; perhaps if I go to the other end I'll find some way out of this mess. OK, let's start running. Drat, the barrels get in the way. Uh-oh, the monster started shooting, I can hear barrels exploding. I'd better run faster. Look, there's a doorway up ahead! Maybe if I get through that... arrgh, the exploding barrels caught up with me! I'm dead!

Story #5
Well, I now know that there's a doorway at the end of the long room, and I think that if I can make it to that door, I might find safety on the other side. So this time I'm going to run as fast as I can towards the doorway. Let's go! Monster coming out... I'm stumbling a bit... barrels exploding... I've got a good lead... almost there... here's the doorway... argghh, I didn't make it! I'm dead!

Story #6
Let's try again. Here we go... running fast... manoeuvring around those barrels well... the monster seems to be slow off the mark... there he goes... yes, barrels are exploding... I've got a huge lead... just don't make any mistakes now... almost there... explosions getting closer... at the door now... open it up... I'm through! Explosions have stopped! It's over! I made it! Hooray!

A crucial question
Now here's the question: is this five stories with unhappy endings followed by one story with a happy ending? Or is it one long story of triumph over adversity?

You may think that this question is arbitrary, that it's strictly a matter of perception, and in fact, it is largely a subjective matter. But my point concerns the person making that subjective judgment. If that person is an old pro gamer, then it's easy to take the second interpretation. The various deaths along the way were merely intermediate steps on the path to triumph. They make the success all the sweeter.

But what if you're not an old pro gamer? What if you consider dying to be the same as losing? You'll have to lose five times before you win. And the question is, how many times are

Monster coming out... I'm stumbling a bit... almost there... here's the door... Aagh, I'm dead

With games that kill the player repeatedly, most people just get the message that they're dummies

you willing to lose before you give up? Can you take all those unhappily ending stories to achieve the happy ending?

Experienced gamers have come to regard the save-die-reload cycle as a normal component of the total gaming experience. I want to slap all these people in the face and cry, 'Wake up!' What they regard as business as usual has a completely different meaning for most people. For most people, death means failure, losing, end of game. It doesn't mean time-out, lose a turn, or reload. When we design games that kill the player repeatedly, most people don't get the message that the game is challenging; they get the message that they're dummies who can't survive ten seconds in a game.

I offer the following design criterion for your consideration: any game that requires reloading as a normal part of the player's progress through the system is fundamentally flawed. On the very first playing, even a below-average player should be able to successfully traverse the game sequence. As the player grows more skilled, he may become faster or experience other challenges, but he should never have to start over after dying.

Indeed, this raises a new question: should we banish death from our games? Why must we kill the player when we all know perfectly well that he will merely reload the level? Why should we force the tedious process of reloading upon him? And why should we require the even more tedious task of frequent saves? Why not use the computer to handle these? If the player makes a mistake, then we automatically take him back to the most recent convenient starting point and let him try again. The result in terms of gameplay is exactly the same, except that the player no longer has to deal with the petty issues of file management. Isn't that what computers were made for?

But there are even larger questions raised by 'Barrels O' Fun'. This level presented a challenge that was easily solved by nothing more than repetitive trial and error. It didn't require any great insight on my part to solve the problem; no stroke of genius or flash of inspiration got me through. Instead, it was just brutal trial and error until I muddled through. What can we say about a design that challenges a person's willingness to resort to trial and error? Shouldn't a game challenge something deeper inside us?



Photography: Jude Edginton

Naughty Dog

Jason Rubin, artist; Andy Gavin, programmer

Sony has high hopes for *Crash Bandicoot* (see page 40). The brainchild of Californian codeshop, Naughty Dog, it proved to be the major PlayStation attraction at this year's E³ show. But is this really Sony's answer to *Super Mario 64*? And can it compete? **Edge** spoke with Naughty Dog's **Jason Rubin** during the show.

Edge When did work start on Crash?

JR Naughty Dog began *Crash Bandicoot* officially in October of 1994. But the first staff to join the project, after my partner **Andy Gavin** and I, didn't arrive until January 1995. *Crash Bandicoot* began as a desire to both bring the classic 2D platform game into the 3D realm without sacrificing the old-style gameplay of the *Sonics* and *Marios*, and simultaneously add lots of new material.

Edge What design objectives did you start with?

JR We resolved to create a game that was entirely constructed in 3D, from the characters in the foreground to the last leaf in the background, which would also allow six degrees of freedom (up, down, left, right, in, and out). But we realised very quickly that the gameplay would be completely different from that of the classics when the level was open. So, we found that the more we put up barriers to guide the player and the less we let the camera stray, the more intense and constant we could make the gameplay... and the closer it got to the classics. So we went for it, set up pathways, and ended up with the game you now know as *Crash*.

Edge Creatively, how much of a step forward is this from *Way of the Warrior*?

JR The difference is like comparing night to day, and I think that it shows. I have some great stories from the *Way* days. We would pick out the fighters' costumes from a single Chinatown Schlock store in Boston. We were paying for the entire production out of pocket – we didn't have a publisher until the 11th hour – so the financial restrictions were crippling. We'd bring down our actors (read: friends) and throw junk on them until they looked, well, different. Then we'd go home (we did the digitisation in the living room of our apartment), and make up moves. In *Way of the Warrior*, nothing was pre-designed. *Crash* was utterly different. We had professional cartoon designers, who had worked on Spielberg's An American Tail and Disney's Duck Tales, come in and give us three months of consulting on character and background design.

Edge What was the toughest thing to get working properly?

JR Everything... at 30Hz. It took six months to get the code tight enough so we could run the number of polygons we needed, with the texture bit depths we wanted, and never drop below 30 frames per second. We were certain from day one that dropping below that refresh rate would destroy a platform game. The programmers were fighting the speed problem the entire project. We keep hearing murmuring from within the industry that Naughty Dog couldn't have achieved *Crash*'s look if we hadn't 'directed Crash down a path'. This is simply untrue. We believe that there is yet more to squeeze out of the PlayStation.

Edge What's the aspect you're most proud of?

JR When *Crash* screenshots first leaked to the US press, a few magazines reported that *Crash* was a great looking 'pre-rendered' game. As soon as they got on a joypad they realised *Crash* is definitely rendered live. I'm also very proud of the gameplay that we have achieved. I understand that **David Perry**, arguably the foremost western 16bit platform game creator, gave us his 'best of E³' vote in a French magazine. David Perry is fiercely serious about his gameplay, and not terribly likely to be wowed by graphics and technology alone. Receiving his praise is an honour. Additionally, I'm proud of the amount of stuff that is in the game, from the number of environments, to the quantity of interaction. *Crash* will fill a 640 megabyte CD when it is finished. And this is without full motion video of any sort, or Redbook audio.

Edge How do you think the game compares to the other big 3D platformers, *NiGHTS* and *Super Mario 64*?

JR I think that 18 months ago three teams set out to create their vision of a 3D platform game. **Miyamoto-san** went free roaming, **Naka-san** went for the feeling of flight, and Naughty Dog tried to enter the 3D realm while staying true in gameplay to the classics and creating a new experience for the players.

Were these three games on the same platform, I think there would be less competition between them. I will buy *Mario*, I will buy *NiGHTS*, and I would buy *Crash* if I hadn't spent the last 18 months locked in a closet working on him! It is unfortunate that every player can't enjoy the ability to own them all. An analogy is *Yoshi* and *DKC2* which co-existed on the shelves peacefully with very little comparison, even though their gameplay differed far less from each other than *Mario 64*'s, *NiGHTS*', and *Crash*'s. I will make this comparison, however: I played *Mario 64* at E³ for two and a half hours. I think that it is wonderful. I want more. In that time, however, I only challenged a single creature, and even that was only at the goading of the 'Nintendette' who stood by me and insisted that she would teach me how to play. Combat just didn't interest me as much as wandering. In fact, the whole *Mario 64* experience gave me a wandering exploration feel. Again, I will liken it to *Zelda*, or (give me some latitude) the feeling you get when you start a new *Ultima*. You are in this incredibly immersive world, so go and see what you can do. Kick everything, touch everything, and play around. None of this is a criticism – I enjoyed solving *Zelda*. And I couldn't get enough of *Ultima* when I was younger and had too much time on my hands. I think *Mario 64* is brilliant. However, I don't think it resembles the old *Mario* games in execution.

NiGHTS was fun as well. But it definitely was not an attempt by Naka-san to create another *Sonic*. In *NiGHTS*, flight control, overall time constraints, and stunts seemed to create the excitement. Like *Mario*, I think that *NiGHTS* is an excellent game... but it wasn't a platformer in the strictest sense.

Miyamoto-san went free roaming, Naka-san went for the feeling of flight, and Naughty Dog tried to enter the 3D realm while staying true to the classics

Edge How do you see the development of 3D platform games progressing?

JR I think, possibly, the third dimension is going to add a new dimension to platforming. I think *Mario64* is interesting, and I think there is a lot to be explored in that direction.

I also believe that the more classic style of platform game is certainly not dead, and won't be dying soon. We tried to add unique elements that added to the classics and took advantage of the extra dimension. Of course, we grew up on *Mario*, and Mr Miyamoto's innovations and design expertise are unmatched in the industry. I want to reiterate that nothing I have said in this interview should be taken as criticism of anything in *Mario 64*. Miyamoto-san continues to produce quality. And it's clear he really loves games. At E³ I watched him play *Crash*. He was extremely good from the moment he touched the controller. I think that is very telling.

Edge What are your plans after this? Will you take *Crash* onto another platform?

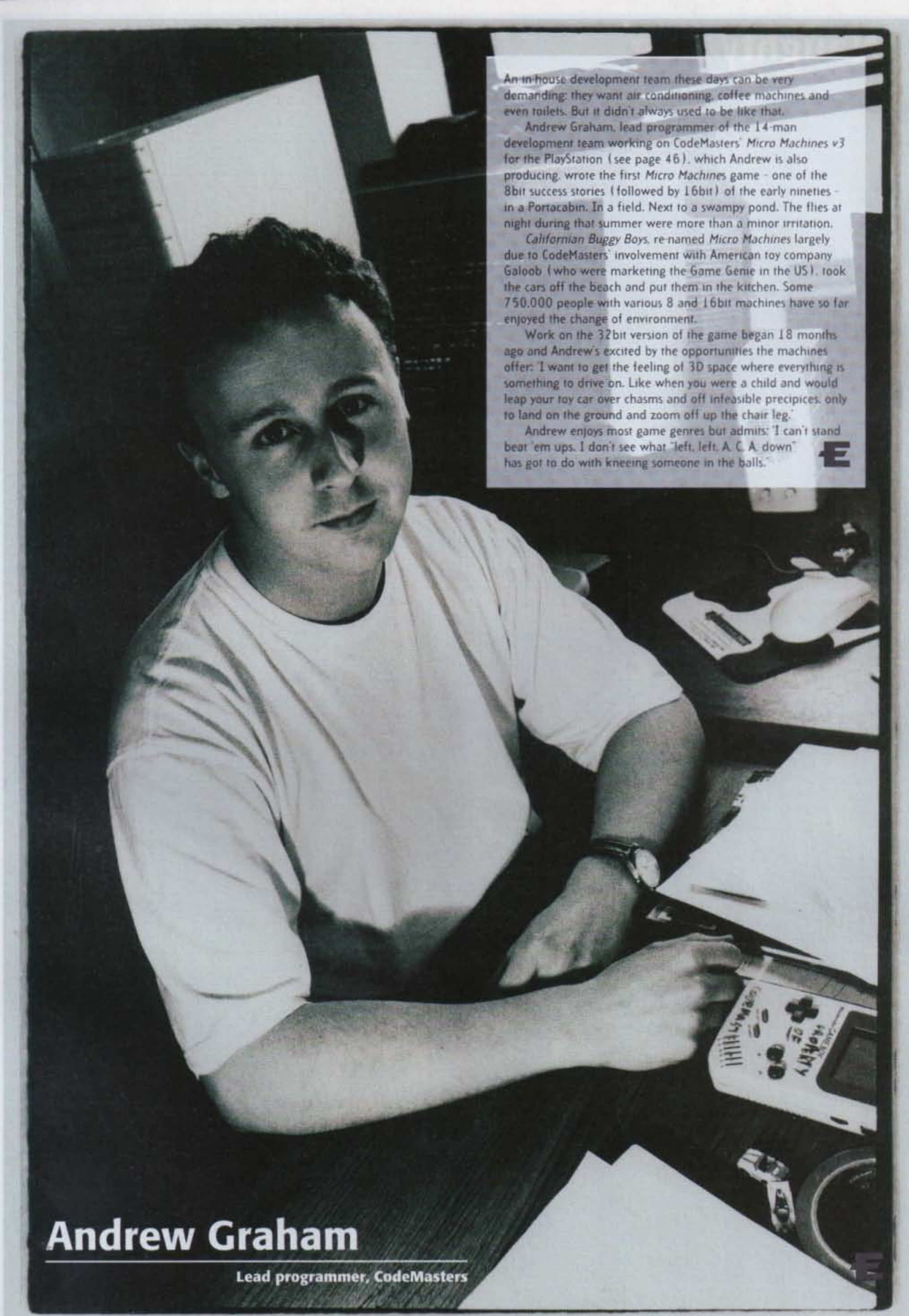
JR *Crash Bandicoot* is exclusive to the PlayStation worldwide. He will not be appearing on any other platform. We have begun another project, which we are confident we will be releasing next Christmas. It is for the PlayStation as well, but I'll be dodging any issues about other console formats!





Naughty Dog's pseudo-3D platformer, *Crash Bandicoot*, has been hailed as the next big PlayStation title. But should it be compared to *Mario* and *NiGHTS*?

profile



An in-house development team these days can be very demanding: they want air conditioning, coffee machines and even toilets. But it didn't always used to be like that.

Andrew Graham, lead programmer of the 14-man development team working on CodeMasters' *Micro Machines v3* for the PlayStation (see page 46), which Andrew is also producing, wrote the first *Micro Machines* game – one of the 8bit success stories (followed by 16bit) of the early nineties – in a Portacabin. In a field. Next to a swampy pond. The flies at night during that summer were more than a minor irritation.

Californian Buggy Boys, re-named *Micro Machines* largely due to CodeMasters' involvement with American toy company Galoob (who were marketing the Game Genie in the US), took the cars off the beach and put them in the kitchen. Some 750,000 people with various 8 and 16bit machines have so far enjoyed the change of environment.

Work on the 32bit version of the game began 18 months ago and Andrew's excited by the opportunities the machines offer: 'I want to get the feeling of 3D space where everything is something to drive on. Like when you were a child and would leap your toy car over chasms and off infeasible precipices, only to land on the ground and zoom off up the chair leg.'

Andrew enjoys most game genres but admits: 'I can't stand beat 'em ups. I don't see what "left, left, A, C, A, down" has got to do with kneeing someone in the balls.'

Andrew Graham

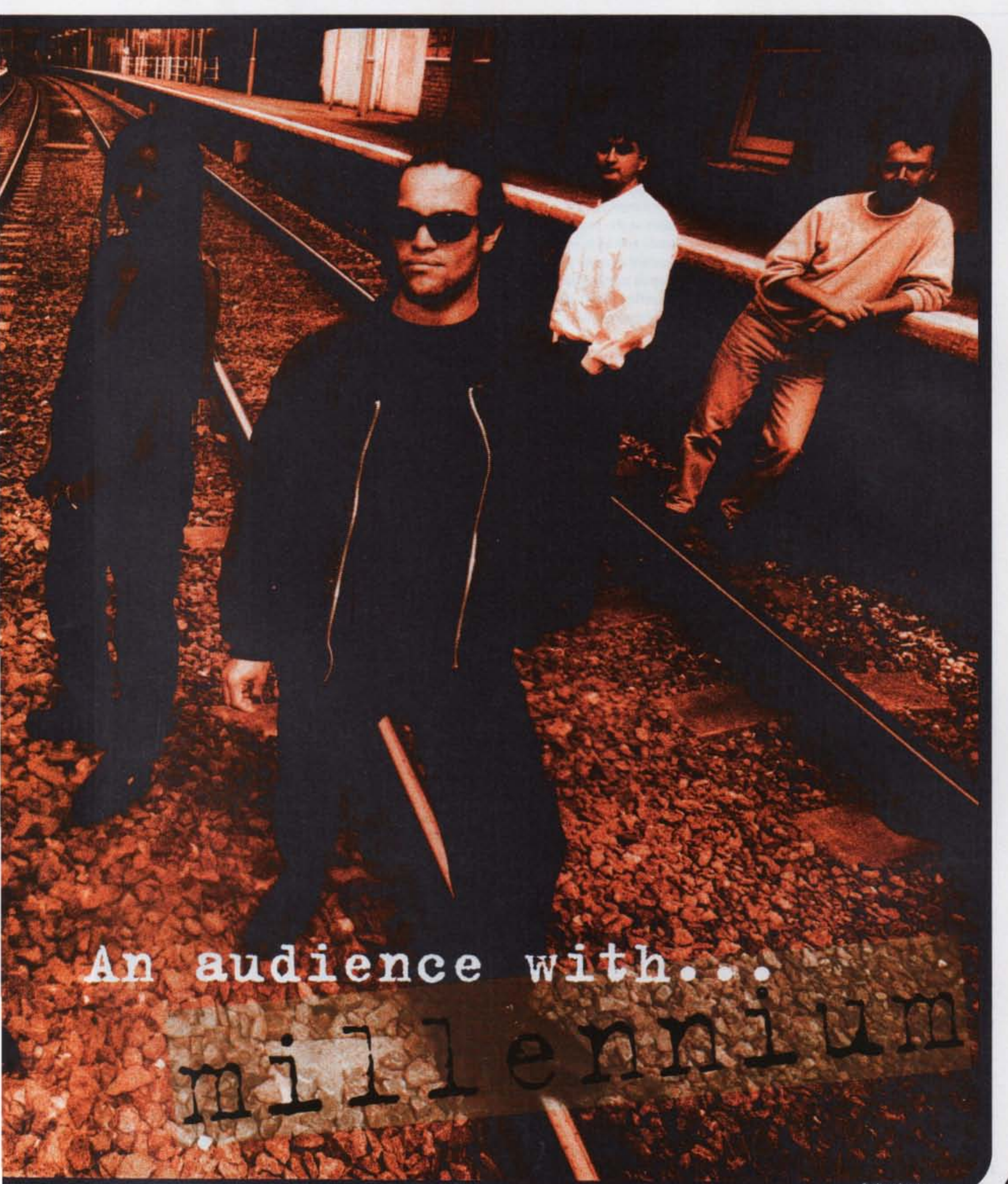
Lead programmer, CodeMasters

Photography: Jude Edginton

Currently making headline news with its *Cyberlife* artificial life technology, Millennium Interactive has come a long way from the days of *James Pond*. **Edge** tracks down the company breeding *Creatures*.



Photography by Jude Edginton



An audience with... millennium

Continued next page

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In 1988, from the ashes of Logotron, a small purveyor of educational software, rose the phoenix of Millennium Interactive. Initially distributing and publishing games picked up on an ad hoc basis, usually from 'bedroom independents', co-founders **Michael Hayward** and **Ian Saunters** soon directed their burgeoning resources to in-house development. The early nineties saw a string of popular games for Sega and Nintendo, most notably the *James Pond* series, and in 1993 Millennium ditched its publishing arm to become pure developers. Since then it's appeared to the casual observer to be largely dormant, with only a handful of work-for-hire jobs (such as *Raymond Briggs' The Snowman*) and the fairly well received *Defcon 5* to its name. In



reality, however, it's been busy creating a totally self-sufficient development facility complete with state-of-the-art video, audio, and digital video suites. In fact, in the last year alone, Millennium has doubled in size. So where are the games? **Edge** paid a visit to the Cambridge HQ to talk turkey with its dynamic and loquacious business development manger, **Anil Malhotra**.

Edge It's been a difficult 12 months. Do you think the industry has emerged healthy?

AM Yes and no. In terms of other consumer products - films, records, books - computer games sell in pathetically small quantities. A company like Nintendo can claim comparable profits but it is reaching much fewer people. The problem is, most games are still designed for the same kinds of people who like the same kinds of things. I think the PC in particular will break down those barriers. And if I were to back one horse in the platform race it would be *Windows 95*, undoubtedly.

Edge With a graphics accelerator? And if so, which one?

AM VideoLogic seems like a good company and I like its technology. But although the 3D boards will be important, the interactivity of *Windows 95* will carry the day. The ability to just plug and play on the network - when you see Microsoft that determined you know they're going to be a player in the market. I guess a lot of the games will be a little different from the standard console fare. There'll be a skew towards intellectual fascination rather than fast reflex. That's going to be the mould for PC-style gameplay.

Edge Interactivity seems to mean different things to different people...

AM What I mean is a bit like playing cards or Battleships, where what's important is that you're playing against me and we can make things happen in realtime.

Edge The usual conception of 'interactive' is a two-way bridge between player and software. You seem to be envisaging a bridge between two people.

AM I'm interested in lifelike software rather than just software that's clever at solving problems or copying how life systems work. And if this advances much further over the next ten years, you will, to a limited degree, be able to surrogate your own personality in a software agent. Imagine sending that off down the line while you were asleep or on vacation. You could make it how you want. You could be truthful or you could emulate a woman. It's cheaper than buying a new wardrobe.

Edge And what about the consoles?

AM You have to bet on Nintendo. Largely because they just know how to make damn good games or get damn good games made for them. You hear all these spurious reports leaking through the Internet about delays due to 'hardware problems', 'overheating on the motherboard', etc, but the real issue is that they want this to be the best game system you've ever seen and the thing that will make it the best is the games. I think they're being shrewd. Just waiting until the software is



perfect. However, unless *Mario 64* and the other launch titles *are* the best videogames you've ever played, they've blown it.

Edge Who else is there room for?

AM Sega are very bullish at the moment but on the other hand the genuine reality of your prospects are often inversely proportional to how bullish you feel about them. The PlayStation's interesting. I've got mixed feelings about it. It's a good machine and Sony launched it well but a lot of people are disappointed by the average quality of its games.

Edge Perhaps due to the fact that it remains a slave to third parties. Twenty mediocrities don't make a single genius.

Unless *Mario 64* and the others *are the best videogames* of all time, Nintendo have blown it

AM Right. As I understand it there were in the region of 500 to 600 PlayStation titles in development last Christmas. It's too many. I think Sony realises this. We've just had a couple of original concepts approved by SOA and it's suddenly changed the rules of engagement. Now it's very particular about what it'll allow you to develop or publish and suddenly very interested in whether you're leading on the PlayStation.

Edge But is this a sign of positive discrimination or negative conservatism?



Creatures

In *Creatures*, the first product to use the much-vaunted *Cyberlife* technology, the player starts with a set of eggs which they can hatch onto their PC and into a 2D world of about 12 screens wide and three high. The cuddly infant's environment is populated with about 40 objects (food, fire, enemies, etc) for it to interact with and learn about and, after about a week, an averagely precocious creature adolescent with a stirring in its loins will be in a position to breed. Its offspring will have a distinct genetic code and, ipso facto, features and traits of its own. In fact, scientists at Millennium claim they have no way of predicting what sort of lifeforms will emerge a few hundred generations down the line.

Millennium is clearly hoping people will adopt its 'creatures' as virtual pets and, moreover, will participate, via the *Creatures* Website, in 'the world's largest artificial life experiment' in which whole communities of creatures will evolve on the Net. This all sounds most intriguing - not to say downright scary - but whether or not these 'creatures' have sufficient personality to engage the heart as well as the mind remains to be seen.





Creatures **is the first game to incorporate the revolutionary** ***Cyberlife*** **technology**

Brains in Planes

Millennium's first 3D racer is set in a 23rd century dystopia of peace, harmony and total boredom, where outlaw racers get their kicks from racing ultra-fast planes around the cities of the future. However, because the human body can't withstand the extreme G-force, the racers must remove their brains and plug them into the craft's circuitry.



Brains in Planes **introduces oddball characters and a high-end 3D engine**

The *Brains* team hope to have at least six circuits on offer, all boasting multiple routes, short cuts, and horizontal and vertical hazards (pedestrians, police vehicles, moving scenery) in true 3D space. Game modes will include multiplayer, tag, battle and time trial. The first track is still being tested on Alias but even so the team feels confident that Millennium's own 3D libraries will deliver an awesome visual experience. All the planes will be generated on SGI and, in-game, will be tracked by a selection of three thirdperson camera positions. Cleverly, anything that could obstruct your view is rendered in transparent polys so vision is unimpaired. The crudity of depth shading will be avoided by constructing 3D maps to limit the viewable distance from any point on the map. Graphical effects will include a particle system allowing for spectacular explosions, fountains, exhaust streams; multiple light sources and lens flare; and a dazzling chrome effect achieved through the use of environment mapping within the graphics API.

Brains in Planes certainly has the credentials to be an attractive and original title, and, if the team's commitment to gameplay holds true, it might even be fun.

Medievil

With the avowed intention of matching the rich, twisted art design of Tim Burton's Nightmare Before Christmas, the classic arcade gameplay of Capcom's *Ghouls and Ghosts*, and the dramatic 3D of the *Alone in the Dark* series, the *Medievil* team could hardly be accused of lacking ambition.

The quest of the hero, Sir Daniel Fortesque, encompasses a mixture of shoot 'em up and exploration set across 11 areas ranging from a graveyard, through an asylum, to a battleground, each offering a distinct playing environment. Sir Dan can jump, duck, and use both handheld (sword, battle axe) and projectile (lightning bolts and crossbow) weapons against the sorcerer Zarok's malevolent minions. Plus, for sheer variety, there are *Clockwork Knight*-style mini-sections in which you get to control Dan's sidekick, Morten, a small worm.





Mixing ***Ghouls 'n' Ghosts*** **action with** ***Alone in the Dark*****-style exploration,** ***Medievil*** **offers a selection of aesthetic reference points**

Technically, things are shaping up nicely. All the game characters and backgrounds are true 3D objects (either texture mapped, Gouraud, or flat shaded), lit with parallel, ambient and point light effects, with the realtime 3D display engine delivering an update of 30fps. If the game matches the technical expertise and the imagination and thoroughness of the design, *Medievil* could be a serious contender early next year.

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AM If I was Sony I would be a little anxious right now because I've not yet had a mind-blowingly good hit. The other reason I'd be worried is that there's probably a short fuse in the marketplace for whether a console's going to make it or not. With N64 just around the corner how much time has Sony got left to turn its machine into the must-have console – Christmas, probably.

Edge What games are you working on and for what platforms?

AM All our games will appear on *Win 95*, but we'll be leading on the PlayStation with *Brains in Planes* [see boxout], a 3D racing game featuring futuristic cartoon craft. The general idea is to make the thing as unfeasible as possible. Racing up the side of a skyscraper and through the window of the block opposite. Keeping the physics persuasive is obviously part of the trick. We want the speed and pizzazz of a *Wipeout*-style game but incorporating a greater feeling of freedom and openness. We also want to engender a feeling of close-quarter competition in 3D. So you can overtake above and below as well as left and right.

Edge You must have a pretty smoking engine, then.

AM In fact, we just dumped the last 3D engine – it wasn't quick enough. The one we've got running downstairs is just a week old. We're going to get the speed almost too fast to start with and then slow it down to the right speed as we add more and more detail.

Edge What about the Saturn?

AM We're working on *Medievil*, a 3D arcade-action adventure akin to the *Ghouls 'n' Ghosts* genre. You're looking at some platform elements and some puzzle-solving elements in a tightly focused set of levels. The premise is that you control a knight, Sir Daniel Fortesque, who has been brought back from the dead in skeletal form by accident by an evil wizard. Unlike most of the creatures in this world you remember that you were once a good guy and set about following the wizard's trail to his lair. The action is viewed from a thirdperson perspective but the viewpoint alters according to the style of level. We move the camera logically to provide the best angle as well as to heighten the drama.

Edge Both projects look extremely promising. But neither, perhaps, are likely to 'break down the barriers', as you put it.

AM What you have to do to break down the barriers, and what we're trying to do, is to launch a product almost based on its novelty. Which is risky because it flies in the face of the classical marketing model, ie give the people what they want.

Edge So what have you got up your sleeve?

AM We have *Cyberlife*. We're not trying to simulate the way life works using computer software (the AI solution), we're actually trying to model the way life works by copying biology. Which is the difference between AI and AL (artificial life). Biology is made up of a load of different things that make people tick and we want to copy those, put them together, and see if we can make software tick in the same way.

Edge How did *Cyberlife* come into being?

AM One of the things that's always disappointed us about games, racing games, or a *Doom*-style game, is the terribly predictable characters you have to deal with. Imagine what it would be like to imbue your opponents with a measure of life-like response and the ability to learn how you play the game. Once the bad guys have seen some of their colleagues lain to waste they're going to think 'Hmm, perhaps it's not such a good idea to hang around here. I'm going to hide for a bit and consider my next move.' That's a much richer experience.



Edge How is this distinct from clever AI?

AM I mentioned earlier what I wanted from interactive games. I wanted to play another human being. AI can't achieve this because from a programming point of view you have to prescribe everything that could happen at the outset. Even if you manage 50 permutations the player's still going to say after a while, 'Oh, it's that one again'. Fortunately for us, one programmer in our company was a biologist by trade rather than a computer scientist. He understood



that what was needed was software that captured the essence of human behaviour.

Edge Which is unpredictable but not erratic. The difference lies in the ability to learn.

AM Right. We started by mimicking a system that could have punishment and reward effects, ie, if an in-game character got shot coming round a corner he might try another approach next time. But trying to write motivational rules becomes absurdly complex. So we took a completely obverse view. What if we model the way motivation works. How an organism responds to a set of stimuli. Take hunger. When your glucose levels fall your biological system gets hungry. That stimulates your brain and if you've never eaten before you've got to figure out what to do. Stick some things in your mouth and see if that helps. Which it does, and the brain remembers. It's like a feedback loop system. Add fear, anger, boredom and the other drivers and you're getting towards a real person.

Edge Even taking things bottom-up rather than top-down must have required a prodigious amount of programming.

AM Over three years. But we can now create a creature for whom the property and nature of an event causes a series of things to happen in its system triggering a decision. From just trying to make in-game characters a bit more authentic we were actually beginning to push towards creating a proper little virtual life form. Which is how *Creatures*, the first game to use the *Cyberlife* technology, came to be developed.

Edge How would you describe *Creatures*?

AM It's a genuine life sim for the PC. It's the first attempt by anybody in the software industry to develop such a thing. You hatch a creature into a virtual world full of objects – fire, water, food – and modify the environment in ways that allow it to learn. Once *Creatures* is released we'll be applying the fruits of that research to more traditional game genres. People are going to be able to do things with computers that they have never been able to do before. I think you'll be quite surprised.

The City of Lost Children

A cult French film would probably scare away less adventurous videogame companies, but Psygnosis is keen to take the interactive art movie initiative



Photography by **Martin Burton**



Lost Children's **senior graphic artists, Laurent Cluzel and Philippe Tesson; and senior coders, Eric Metens and Jésus Martinez**



The backgrounds in *The City of Lost Children* are complex and beautiful to look at. The harbour is one of the most important areas in the game – and one of the most visually stunning. Seagulls and wave noises add aural realism

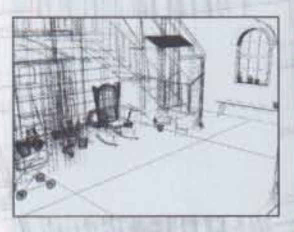
Format:	PlayStation
Publisher:	Psygnosis
Developer:	In-house
Release:	Jan 97
Origin:	France

Videogames based on movies are usually cynical affairs, the only concern being to emulate the financial success of the film with as little effort as possible. Aesthetic issues are often, if not always, secondary.

So, it is refreshing to see that *The City of Lost Children*, a cult, relatively low-budget french film, will find its way onto the PC and PlayStation later this year. Although the film was universally praised by critics, it wasn't exactly ET in terms of box office success – which means the designers at Psygnosis' french office must have had more on their minds than making a quick fortune.

The story certainly is an enchanting one. *The City of Lost Children* is a surreal fairytale set in a kind of mid-Victorian Jules Verne, Dickensian urban landscape. The plot concerns a mad scientist, Dr Krank, who suffers from premature ageing due to his inability to dream. To halt this process, he kidnaps children, brings them back to his oil rig base, and steals their dreams. The heroine of the film, ten-year-old Miette, sets out to stop Krank and free the lost children.

However interesting the story is, it's not exactly obvious videogame fodder: a ten-year-old girl as a hero, a surreal narrative, a total lack of weapons. So when the film's producer approached Psygnosis about developing a conversion, why did the Parisian coders take up the offer? Producer of the game, **Carole**







The artists make the backgrounds in three stages. First, a wireframe image is created (left), and then filled (centre), then the textures are added (right)



Producer Carole Faure (centre) and various Psygnosis team members discuss *City of Lost Children* over lunch at 'El Rancho'





There are 50 locations in *City of Lost Children* but because each one has at least three views it was necessary to create 150 *3DS* scenes

Faure, explains: 'In June 1994, when we read the script and went to the shooting, we were impressed by the gigantic sets, a storyline that appealed to the common imagination (a mix of Oliver Twist and Jules Verne) and some very archetypal characters – perfectly suited to a videogame universe.'

To the game designers, the movie, with its visually stunning set designs, looked more graphical than cinematic and Psygnosis' interest in the film was more artistic than financial. Which is perhaps why the videogame version of *Lost Children* – still early in development – looks absolutely astonishing.

The City of Lost Children is basically a 3D adventure game, in a similar mode to *Alone in the Dark* or, more recently, *Resident Evil*. The player, controlling Miette, must explore a fictitious, crumbling Victorian city (Faure calls it '19th century London mixed with New York and Venice, and given a touch of Escher') and eventually get to Krank's oil rig to free the lost children. There are loads of puzzles to solve along the way and, as with most other adventures, the interaction between player, objects and in-game characters is paramount.

Regardless of gameplay features, the first thing you notice about *Lost Children* is its atmospheric backgrounds, which truly rival those employed in *Resident Evil*. There are around 50 locations in the game, including such graphical gems as the orphanage, the crumbling multi-level factory, the diver's cave and the harbour, with its precarious walkways, docks and cranes. Many of the scenes have been taken directly from **Jean Rabasse**'s complex set designs for the film, giving the game an impressive visual and thematic affinity with the movie. Furthermore, each setting is amazingly complex with tiny details everywhere (chipped bricks, mould running up walls, cracking plaster, shiny copper pipes, etc) literally bringing each scene to foggy, industrial life.



Much time is spent adding light and definition to each scene. Lighting is created using complex *3D Studio* applications

Many of the scenes have been taken directly from Jean Rabasse's complex set designs for the film



Miette inspects a classroom in the orphanage, while evil siamese twins Zette and Line (collectively known as 'the Octopus') look on

As with *Resident Evil*, the backgrounds in *Lost Children* are all rendered. Senior Graphic artists, **Laurent Cluzel** and **Philippe Tesson**, studied maps, photos, plans and sketches from the film to ensure authenticity and then constructed the game sets using *3D Studio*. Each of the 50 locations has at least three camera angles from which the scene can be viewed, meaning the modellers have had to create 150 superbly detailed sets.

To accentuate the game's scenic realism, dozens of touches were added following the basic *3D Studio* designs. Lights switch on and off in windows to give the impression that this is a real, inhabited city, and there are over 40 interactive elements in the backgrounds



Continued next page

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Psygnosis have attempted to capture the colours and ambience of the actual film (left). The movie's Victorian sets and green lighting tints are evident



Cluzel, Tesson, Metens and Martinez are accosted by a Parisian street sweeper

(ropes, pulleys, cranks, etc) to ensure they play a real role in the game. The scenes are so detailed that creating each from wireframe to completed product took one week per camera angle.

The symbiosis of background and game action has been an important consideration for Psygnosis. Although the scenery is created entirely in *3DS*, game characters and objects were all modelled using *SoftImage*. As a result the artists were worried Miette and the others would look detached from their backgrounds, compromising the immersive atmosphere of the game. A number of steps were taken to reduce this. For example, the artists have drawn their own background textures rather than using photo-textures, which would look too 'real' compared with the CG characters. Furthermore, a special program was written to convert *3DS* lighting code to *SoftImage*. So, when someone walks into a room with, say, a green lighting tint, their clothing takes on the same tint – effectively making them much more a part of the backgrounds.

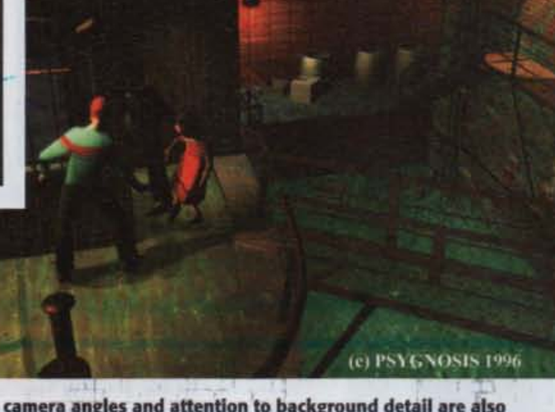
The team promises at least two ways to solve each puzzle: a straightforward way, and a cryptic one for the seasoned adventurer

All 20 characters are fully motion captured and each is constructed from around 300 polys with 225 frames of animation, meaning the human movement is incredibly convincing. Miette is especially impressive: she can climb on and jump off objects – a feat rarely attempted with motion capture (MC), and her dress is fully animated, again a complex procedure which really hasn't been done before (perhaps mostly because it is rare for videogame protagonists to wear dresses). The 12-year-old dutch actress used in the game's MC process was one of the youngest people ever to be digitised. Psygnosis were hoping to use **Judith Vittet**, the 12-year-old star of the film.





The videogame Miette is carefully modelled on her celluloid counterpart. Design sketches from the film were consulted



The camera angles and attention to background detail are also distinctly cinematic, perhaps down to the influence of Caro (below)

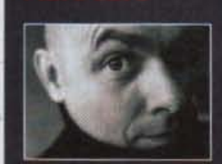
However, all the MC filming was done in Amsterdam, and Judith's parents were not quite ready to let their daughter spend a weekend with loads of artists, programmers and actors in the drugs and sex capital of Europe.

The character list for the game is, predictably, full of Gallic eccentricity. Scattered throughout *Lost Children* are the Octopus (evil Siamese twins, motion captured by tying two actresses together – perhaps explaining why Judith's parents were so worried), One (a giant ex-harpooner) and the Cyclops (a sect of fanatic blind people). All are beautifully animated, again comparing favourably with *Resident Evil*. 'I tried to compensate for the lack of polygons by putting more detail on the textures,' explains artist **Noël Billy**, who added the textures using *3DS*. It's a tactic which can lead to cosmetic disasters (as happened in *Time Gate*), but here each character has a real sense of solidity and personality.

All that's missing, ironically, is gameplay. Psygnosis has a full script and storyline, but currently the design team is still implementing the final touches to the graphics. Interestingly, the team promises at least two ways to solve each puzzle: a basic, straightforward method, and a more complex, cryptic method for the seasoned adventurer. In theory, this should add much to the game's life span.

Psygnosis looks as though it is on the verge of creating another classic PlayStation game. Furthermore, the PC version, with its lush hi-res backgrounds, shows far more promise than the rush job that was PC *Wipeout*. If Psygnosis succeed, videogaming's cultural reference points may be extended beyond *Doom* clones and beat 'em ups and into more thought provoking arenas such as cinema art. E

Marc Caro



To ensure *The City of Lost Children*'s authenticity as a videogame conversion, **Marc Caro**, the artistic director on the original film, was brought in as artistic consultant.

Marc visited the design team several times during the game's development and has had a considerable impact on the way it now looks.

A fan of computer technology, Caro hopes to develop the game version of his next movie while it is still being filmed.

Interestingly, he hates Hollywood inspired titles: 'Telling a story can be a beautiful thing, but interactive movies? They're a terrible idea.' His favourite games? *Doom* and *Photoshop*!





The Darkening

A sprinkling of full motion video combined with 'the most advanced 3D engine on the PC' gives EA's latest space escapade real potential







***The Darkening* skillfully blends FMV sequences, prerendered images and realtime 3D graphics to produce an epic space adventure**

The last thing the computer industry needs is another *Wing Commander*. Although the series was well-produced, flashy and wildly successful, it epitomised the stagnant pool into which PC gaming – with its 'interactive movie' obsession – has managed to crawl. *Wing Commander IV* was neither a movie, nor particularly interactive. And Mark Hamill was only ever any good in Star Wars. End of story.

So when EA announced the development of a project named *The Darkening*, and that it was a sci-fi adventure involving FMV sequences, the prognosis looked grim. It looked as though EA had forgotten about gameplay and instead developed some pointless fetish with Hollywood. Judging by what **Edge** has seen, though, *The Darkening* could turn out to be a genuine case where FMV is used in a constructive way, to add to an already tecnically outstanding realtime 3D game.

The Darkening could turn out to be the first occasion where FMV is used in a constructive way

For a start, you can tell *The Darkening* is more complex than the average interactive movie by the fact that it's so difficult to summarise. Away from the convoluted story, the game is essentially a sophisticated 3D shoot 'em up in space. Players begin in a pretty standard craft and must barter and trade their way across a futuristic universe, a la *Elite*, upgrading the ship and weapon supply as they go. As with *Elite*, the player can trade in a number of legal and illegal goods, and take on various missions (being kept under wraps at the moment, but EA promises some exciting and varied objectives) to supplement the lowly income brought about by selling items such as Biopolys, envirosuits and pleasureborgs.

The team at EA Manchester (programming *The Darkening* for Origin) has no doubts about the quality of their 3D engine. **Adam Medhurst**, senior artist and designer on the project calls it





The Darkening's designer Adam Medhurst (left) and producer Owen Roberts

Format:	PC CD-ROM
Publisher:	EA
Developer:	Origin
Release:	October
Origin:	UK





Darkness and neon characterise *The Darkening* universe, showing a design obviously influenced by archetypal sci-fi flick, Bladerunner





When players land on a planet, they can immediately hook up to a computer interface, providing valuable info about the game's plot



EA's busy Manchester codehouse. Although *The Darkening* looks almost complete, it hasn't even reached alpha stage yet

'The most advanced engine on the PC,' and these are not empty words. The code actually comes from a customised version of *BRender*, which has been tweaked considerably by **Paul Hughes**, **Tony Stockton** and **Brian Marshall**, EA Manchester's in-house coders. The engine now includes z-buffering, phong lighting models, realtime anti-aliasing, multiple realistic light sources and, perhaps most impressively, it can deal with 140,000 fully lit and textured polys a second. Yes, cynics could mention the lack of landscapes to worry about, but in the game's favour it can easily cope with several spacecraft on screen at once with no visible slowdown (the coders also claim to have set up space battles involving up to 100 craft). And these are not *Elite*-esque wireframes – the ships are detailed and often huge, yet they fly with totally believable grace and speed.

A particularly impressive graphical feature is the realtime lens flare which illuminates the screen whenever the player's craft flies past a star. This is such a subliminal touch, yet it adds greatly to the atmosphere and realism of the game. The external view, where you get to control your ship while it is visible on screen, is another aesthetically powerful feature. Here the craft zooms, loops and trails through space with an almost hypnotic smoothness – it looks like a prerendered intro sequence, or a scene from Star Trek: TNG. Hard to believe this is happening in realtime.

To compliment the graphics, the missions will involve some excellent deep space shootouts. *The Darkening*'s universe, which is fully explorable, is crowded with pirates, police and rival traders who will all be on the player's tail at some point. Consequently, wise trading is a necessity in order to afford



The customised *BRender* 3D engine can cope with dozens of ships on screen and can also produce a marvellous realtime lens flair effect



Dispensing with pirates and rival traders takes up a lot of the player's time in *The Darkening*. Hence, plenty of colourful realtime explosions

decent weapon systems and craft updates. There are dozens of different weapons including nine missiles, a collection of mines and several lasers. There are also 60 spaceships, 18 of which you can purchase and fly yourself.

Trading is carried out on any one of the eight inhabitable planets, each complete with its own unique political,

The engine now includes z-buffering, phong lighting models and, most impressively, 140,000 fully-lit, textured polys a second

economic and social background (there are also ten moons and 20 spacestations – all of which can be used for trading). When players land on a planet, they can access the local computer network. A kind of fictional Internet, this can be used to trade, to pick up missions, to view information about the planet, or to look up details about any notorious pirates who may be in the surrounding air space.

That's not all. Each planet has a number of locations – bars, hotels, etc – that players can visit by accessing a map screen and clicking on the relevant icon. It is in such locations that *The Darkening*'s much publicised FMV sequences can be viewed and the storyline lurking beneath the flight sim exoskeleton revealed. Yes, *The Darkening* is a futuristic sci-fi adventure as well as a 3D shoot 'em up. Rather than being an anonymous trader, you take on the role of Lev Arris, a pilot who has just awoken from ten years of cryogenic suspension and is thus





The FMV sections are well acted and atmospheric, which makes a welcome and surprising change

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When the player's ship approaches each planet, a beautiful prerendered sequence shows the craft's flight path. Each one looks different

suffering from amnesia as a result. Hence, regaining your memory is a sub-plot to trading and indulging in fights.

The movie sections are not just eye candy, they provide vital clues in the player's quest for Lev's true identity. EA are sure the FMV provides a service that CGI alone couldn't: '*The Darkening* is a sci-fi adventure involving different factions of people from a vast universe,' explains Medhurst. 'We therefore found it appropriate to establish the emotional spine with full feature film quality. The FMV, then, gives an emotional purpose to the game – it's not just about points and money, it's about people.'

Luckily, unlike most games that use FMV to tell a story, *The Darkening* seeks to intertwine movie sections into the game in a plausible, non-linear way. As Medhurst says, 'it's not like *Wing Commander III* or *IV* where you watch some footage and then trot off. These sequences can appear at any point in the game and often serve no immediate purpose. In order to absorb any of the intricacies of the subplots you have to travel around the universe finding out things. In this respect, it's a little like a

Unlike most games that use FMV, *The Darkening* seeks to intertwine movie sections into the game in a plausible, non-linear way

detective story – there's certainly a lot of investigative work involved.'

It is this non-linear nature which gives *The Darkening* credibility as an FMV product. Because players can visit any planet at any time, the Lev sub-plot has been intricately woven into this freedom. Currently, the melding of the FMV-led detective story with the *Elite*-style blaster



Each spacecraft is equipped with a number of different weapons. The default green lasers are, not surprisingly, the least effective



The team responsible for *The Darkening*, posing with a model spaceship and a suit of armour, both to be found within the game

is still being programmed, but the plan is to include story 'flags' which the player will trigger, sometimes inadvertently, sometimes via detective work. When triggered, an FMV section will be shown, furthering the story and providing clues.

To make things more difficult, these flags will not always be available. For example, the first time a player visits, say, Hades, there may not be any locations highlighted for him to explore. However, if the player returns after meeting some shadowy character on another planet, a location may then become visitable, along with its accompanying FMV sequence to further the investigation.

Even out of context, the movie sections are of a superior quality to most. Not only are they watchable, but they are absorbing, even gripping in parts, mostly down to some excellent performances from **Clive Owen**, **Christopher Walken** and **Brian Blessed** (see boxout).

Prior to actually seeing sections of the game, **Edge** was sceptical about *The Darkening*. It threatened to be another cynical exercise in FMV exploitation: release a sub-standard 30 minute film and call it a game – a familiar recipe, and the early hype (which centred exclusively on the film footage) suggested EA had followed it step by step.

But *The Darkening* clearly has much more to offer. The presence of a state-of-the-art 3D engine is testament to Origin's determination to make the game fully interactive, and the product is already turning heads. Even though development is not in the alpha stages, an early demo was extremely well received at E³. As Medhurst says, 'We want to improve the reputation of games which employ movie sequences'. It looks as though EA may just succeed.

How it's done...

The storyline to *The Darkening* was devised by the game's producer, **Owen Roberts**. Stylistically, it's a cross between Bladerunner and cult British robot horror flick Hardware – a dark, grubby future dystopia inhabited by shady characters and literally awash with intrigue.

The filming took place at Pinewood studios over the summer of 95 and post production went on until Christmas – due to the eclectic mix of film, CGI and special effects which had to be combined.

The completed game will feature almost three hours of video footage.









The stars of *The Darkening* (clockwise from top left) John 'Alien' Hurt, Clive 'Chancer' Owen, Mathilda 'French' May and Christopher 'psycho' Walken

Pandemonium

The platform genre is enjoying a healthy revival as state-of-the-art videogames fall back to the grass roots of gameplay





This sawmill level provides plenty of opportunities for those 'badly judged jump' disasters that make platform games so... addictive

The videogame industry is well into its 32bit era, yet the platform game is still proving to be a prominent and important genre. Meaning PlayStation owners can expect two *Mario* 'homages' to appear around the end of the year: *Crash Bandicoot* (see page 40) and *Pandemonium*, from *Gex* creator, Crystal Dynamics.

Although similar in gameplay, the two titles are noticeably disparate in appearance. Where *Crash* takes its inspiration from cartoons and Sega's emblematic Hedgehog, *Pandemonium* seems to be borrowing from much less hip and familiar sources – namely English medievalism and Middle Earth fantasy novels. First there are the characters. The player can swap between two protagonists: Nikki, an athletic and elf-like magician's apprentice; and Fargus, a deranged Jester. The latter carries a staff which serves as a weapon and can fire missiles, flames, etc, depending on the power-ups collected.

To reflect the Tolkien-esque look of the characters, the designers have come up with some spectacular and highly atmospheric Hobbit-style backgrounds. Of the 15 levels in the finished product, **Edge** played just three and two of these featured web-filled caverns and dark mushroom forests, each with spiders, weird hog-like creatures and dragons on the rampage. The third stage, featuring an Arizona setting, had less in common with the general theme, hinting toward more graphical diversity.

In a similar fashion to *Nights*, each level uses 3D features including zooming, free-moving cameras, platforms with depth as well as width, etc, without challenging the fundamentally 2D gameplay of, say, *Super Mario World*. Nevertheless, it's the basic elements of classic platformers such as huge jumps, timing, accuracy, moving platforms, secret areas and fast-paced action that make them addictive, not overt innovation. *Pandemonium* definitely looks to contains all these elements, and who can blame the designers for thinking, 'if it ain't broke, don't fix it.'

There are a couple of stabs at individuality, mainly the voice talents of two stand-up comedians who will provide Nikki and Fargus with hundreds of sarcastic/humorous comments for their respective characters. Furthermore, the designers are considering making it possible to morph the two heroes into various animals, if the situation demands it. If these features work, they could combine well with *Pandemonium*'s pretty graphics and sound grasp of platform lore to create an addictive addition to one of the world's oldest gaming genres.









The use of 3D makes the forest stage more attractive, but may add little to gameplay



The Road Runner-esque desert stage looks rather sparse but includes some fun sections – like running on top of a rolling boulder (centre)

Format:	PlayStation
Publisher:	Crystal Dynamics
Developer:	In house
Release:	Christmas
Origin:	US

NiGHTS

Sega is pinning its hopes on an amalgam of state of the art 3D and an unusually ethereal scenario. Edge meets the dream team behind *NiGHTS*



Although the majority of *NiGHTS'* gameplay takes place in the air, your flight is essentially restricted to a side-on path, twisting within the 3D environment. When on the ground, motion is less restrictive





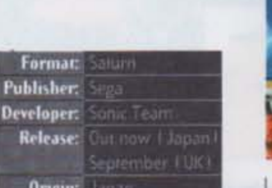
Today, Sega is in a position similar to the one it was in prior to its saving release of *Sonic* for the Mega Drive back in 1992. Despite the release of excellent arcade conversions like *Virtua Fighter 2* and *Sega Rally*, the Saturn is, in terms of sales, still trailing in the 32bit race. To fight back, Sega is preparing more than simply a 3D update of *Sonic* (although that, too, is in the pipeline). The original *Sonic* team – the innovative programmers and designers who developed the Sonic character, and the stunning worlds he commanded – has embarked on a bold new adventure – *NiGHTS*.

The main game concept of *NiGHTS* comes from the lead programmer and level designer of *Sonic*, **Yuji Naka** (see interview, page 38). *NiGHTS* bears little resemblance to the hackneyed plots of your average platformer – the player takes the role of either Clarise or Elliot, two young teens from the city of Twin Seeds who have never previously met.

At night, however, both characters share the same dream. Here, the character of NiGHTS emerges to help guide the players to save his home world, Nightopia, from Nightmare. It's a bit trippy, but according to Mr Naka, 'This is the main storyline. Behind this is the implication that those who have not fully explored their potential can overcome their fears when they use the strength of NiGHTS to defeat the evil ruler.'

Although *NiGHTS'* fast-scrolling, fully-3D world can be explored in complete freedom on the ground, the main appeal of the game is likely to come from the flying sequences, activated by either player finding the NiGHTS suit.

Here the game truly begins to shine. An enormous amount of work went into



Format:	Saturn
Publisher:	Sega
Developer:	Sonic Team
Release:	Out now (Japan) September (UK)
Origin:	Japan







The scenery for *NiGHTS*, while being atypical of Japanese design, still retains oriental flair and idiosyncrasies – note how the stars trail behind NiGHTS' flight path. The incredibly vibrant colours, too, are indicative of *NiGHTS'* origins



By flying through *Sonic*-like hoops (right) NiGHTS can collect sufficient gems to open up doorways to subsequent levels. Failure to collect enough gems in a time limit causes the player to lose their NiGHTS suit and return to their 'human' form, a fate that has befallen Clarise Sinclair (inset)

perfecting the flying model – which grew out of Mr Naka's experiences when creating the flight algorithms for *Sonic*'s Knuckles. In the virtually complete game which **Edge** has seen, it is already obvious that the NiGHTS team has performed an exceptional job.

Although the player has full freedom of motion when on the ground, in the air the gameplay occurs on a branching track, due to feedback from early beta-testers who found that gameplay was too difficult with full freedom when flying.

While containing familiar goals, the gameplay paradigm is truly distinct from anything that has come before. Instead of killing enemies and working one's way from left to right to eventually arrive at a boss, the player needs to execute precision flying manoeuvres to collect gems while attempting to locate the pods where the gems are collected. At other areas, the collected gems are 'redeemed' to increase the time one has in the NiGHTS suit. When the time runs out, the player is dropped from the sky, and must find another suit before he or she is caught by a marauding alarm clock (if it gets you, you wake from the dream and the game is over). When enough gems have been collected, the player is transported to a special boss stage.

Because the Saturn controller couldn't handle NiGHTS' complex flying patterns, the team developed a new analogue pad that will ship with the game (presumably, it will also be compatible with future Saturn software). Resembling a 'fattened' Saturn controller, the pad has an N64-like analogue thumb-pad located above the current eight-way digital pad (for more see feature, page 50).

The dream-like quality of the game is enhanced by the character work of **Naoto Oshima** (creator of Sonic) and **Takashi Iizuka**, who was a designer on *Sonic 3*, and is now designing the overall game world of *NiGHTS*.







Each level is accompanied by a map of the world showing the dream path to take



End-of-level bosses exist in a vibrant colour scheme. Killing each requires different tactics (right)

While this may be the most technically impressive Saturn title to date (and it is important to note that it was done almost entirely using custom libraries – the SGL created by AM2 was used only sparingly), it is not at all clear yet whether it will be a commercial success, for a number of reasons. The game world and plot are not at all familiar – there is no princess rescuing, there is very little enemy dispatching, and the dream-world theme would seem to have more in common with a children's book than a videogame.

Sega faces a major marketing challenge with *NiGHTS*. The plot and nonviolent gameplay seem to skew its appeal toward younger gamers – the opposite of Sega's target audience. How Sega will convince older players to give the game a chance should be one of the year's more interesting marketing stories.

Continued next page

Continued

Sonic Teamwork







SONIC TEAM

The team behind *NiGHTS* are used to the pressures of creating important, platform defining games: they're also responsible for most titles in the *Sonic* series. **Edge** visited Sega's Tokyo HQ to talk to **Yuji Naka** (executive producer, centre), **Takashi Iizuka** (game designer, left), and **Naoto Oshima** (director, right) about their new game and about that irrepressible, blue spiky hero.

Edge When did you begin working on *NiGHTS* ?
YN After finishing *Sonic & Knuckles* we had a brain storming session which lasted six months. Actual project development began in around April 1995.

Anyone with a good basic idea and a very strong will can create a game such as *NiGHTS*

Edge *NiGHTS* does not have a stereotypical Japanese look. Were your visual inspirations European?
YN *NiGHTS* has an elegant look... I did not travel a lot to research it, I only went to the USA. Nevertheless, I can imagine the game will please players of any nationality. *Sonic* made a very big impact in the States and Europe, but I do not think giving *NiGHTS* a completely different look was a mistake. We are confident of its success.
Edge Why did you introduce a new character instead of writing another *Sonic* sequel?
YN Yes, it would have been easier to use *Sonic*, but we thought that people were expecting more, so we created a new character and a new world. We also wanted to take a long break from the *Sonic* series so that, when we approached it again, we could make a significantly more advanced game. Many companies continually capitalise on their successful titles, bringing out more and more sequels until eventually the market gets saturated and the players get bored. In any case, it is difficult to keep coming up with new ideas for a familiar series. We're only human after all!
Edge Human, but obviously, you must consider yourselves talented developers...
YN Anybody with a good basic idea and a very strong will can develop a game such as *NiGHTS*. We are not geniuses at all! Our achievement was to turn the idea into a reality. There are plenty of better games than *NiGHTS* in Europe and the USA – we certainly do not believe that our game is the best that could exist [laughs]. Rather than seeing ourselves as geniuses, our style is much more to say that 'we are doing our best to make a good product!' [laughs]. We really believe we are normal people. To make a good game you have to be very close to the user.
NO Perhaps we are closer to children...
YN Since I'm 30, it's perhaps difficult to say that I'm a child!. But it is true, we love videogames...
Edge When you write a game, do you have experienced gamers, or novices in mind?
TI When we started *NiGHTS*, one of our first concerns was to create a world where players would be able to improve their skills even after a lot of play. We didn't want to create a game where, after finishing the first stage, you go directly to the second and never look back. We wanted a game where even an experienced player could continually go back to try new things. We have also incorporated features into the game which make it different each time you play. For example, we included an 'emotion parameter', so each of the inhabitants will sometimes like *NiGHTS* and sometimes hate him. Their feelings will be unforeseeable and these inhabitants will





One advantage *Sonic* had over *Super Mario World* was its excellent use of colour. *NiGHTS* follows that formula, but due to hardware constraints it is still behind *SM64*



***NiGHTS' Sonic*-like influences become apparent when you have to swoop through these rings in succession**

live their own lives while the game is taking place.

Edge Is the finished game faithful to your original concept of *NiGHTS*?

YN Initially we wanted to create a game with a slow rhythm, a game where the player would be able to fly at ease... but during the development we progressively increased the speed of the game until it reached the level it's at now. In fact, we instinctively came to a game speed closer to a *Sonic*-type title. In retrospect, the gameplay feels much better now.

Edge Is *NiGHTS* using the full potential of the Saturn?

YN Not in my opinion, no – we believe it is possible to do much better. *NiGHTS* is our first Saturn game, so before starting, we spent some time studying the machine. And we still have to study it! There are so many things the Saturn can do that we have not had chance to try yet. We used the best of our skills in programming *NiGHTS* and we were limited only by our own capabilities. We were more than satisfied with the Saturn.

Edge How did you come up with the lead character?

NO To begin with, I did some research into US and European culture and decided I wanted to design a character similar to an angel. In a sense, this was a conscious effort to create somebody who would contrast with *Sonic*. *Sonic* was a very cool, but more or less one dimensional, character. NiGHTS, on the other hand, has emotions – he'll laugh one minute and become very angry the next.

Edge How important to the game's success is the design of the characters?

YN In order to design a commercially successful game, we feel it's not enough to simply make a game where the main character is liked by a majority of users, or where the character also plays a role as a communicator in completing the game without difficulty. What we aim to do in this game is to propose something revolutionary in our existing cultures through the use of innovative new characters and also by ignoring the normal concepts of game design.

Edge Flying is a huge part of the game, why do you think that will be fun for players?

YN When one dreams of flying like a bird, the sensation is exceptional. We want to make this dream come true for players – that is the fundamental design concept behind *NiGHTS*. Thus we believe we've created a totally new kind of game where players can experience the refreshing feeling of flying – it's something they'll want to come back to again and again.

We've also introduced a new timing factor, which means *NiGHTS* can be played in shorter sections, but will still be addictive and accessible to all levels of players.

Edge Do you believe that games players are older now than when you made *Sonic the Hedgehog*?

YN No, we still target a wide range of users. For women and younger players the pleasure will be in completing the game, and for experienced gamers, the replay value – the fact that you can go back and find new things each time you play – is given priority.







In the confusing ground-based sections an arrow indicates where to run (middle)

When one dreams of flying like a bird, the sensation is exceptional. We want to make this dream come true

Edge What have been the biggest problems in the development of *NiGHTS*?

YN The biggest problem was to enhance the playability. What we tried to attain was a 'smooth and comfortable' feeling, but we could not get this to a satisfactory level with the current Saturn pad. So, after combining the ideas of the whole team, we developed the analogue pad. As it turns out, the biggest difficulty has turned into one of the game's biggest charms.

Edge How do you rate modern videogames?

YN Recently, next generation games have placed the emphasis on graphics to the detriment of gameplay. Sometimes, very complex worlds actually ruin the playability of the game. While designing *NiGHTS*, we paid particular attention to the gameplay. It is a very important point for us. We tried to create *NiGHTS* purely from the perspective of the player.

Edge If you've been disappointed by next generations games, which titles do you actually enjoy?

NO I like games like *Populous*. But also *Tetris*...

YN I like Namco's old titles such as *Rally X*. On the PC, I like *Lemmings* and *Alone in the Dark*. I also enjoy Mr Miyamoto's games – *Mario Brothers*, etc.

TI It's the same for me. I like old Namco games like *Pac-Man*, SNES games like *Donkey Kong*, *Super Mario Brothers*, etc. New games are too difficult for us [laughs].

Edge What are your plans now *NiGHTS* is finished?

YN I'm going to take a rest and enjoy life – I think that if you are not enjoying your life and what you are doing, you cannot create games that people will enjoy. So, we are alternating between rest and intensive work. Creative ideas are born from our spare time.



By collecting a 'speed up', NiGHTS' is trailed by a streamer, swooping and twisting as he flies through the rings. The level designs are truly bizarre (inset)

Crash Bandicoot

Rumour has it *Crash Bandicoot*'s visual punch gave Shigeru Miyamoto a metaphorical black eye. But can its gameplay pack as much power?





'We realised right off that character-based action games have had some of the best designers in the industry', says Jason Rubin of Naughty Dog. So how do you go up against Miyamoto if you don't have Miyamoto? The answer? 'We had hundreds of people play *Crash* and tell us what was wrong.'



The presentation in *Crash* is gorgeous. Even its level selection screens are impressive

It's no coincidence that both the Saturn and PlayStation have 3D platformers in the pipeline with *Super Mario 64* just around the corner. You can almost see the VIPs at Sony and Sega taking one look at early *Mario 64* screen shots and yelling 'Make one of these for my machine now, or we're finished!' to the nearest fawning minion.

Whatever the case, it is strange and, some may even say, reassuring to find that despite all the technology now available to developers they should turn to the lowly platformer to prove the merits of their respective machines. The genre hasn't figured in console rivalry since *Mario* and *Sonic* went head to head back in the early nineties. What should this retrospection mean? A complete drought of new and original ideas or, more optimistically, a rediscovery of timeless gaming principles? With any luck, it's the latter.

As it turns out, *Crash Bandicoot* seems to be borrowing more than just gameplay from previous platform greats. The obvious example is its lead figure: Crash is a cute, speedy animal, who eliminates baddies by spinning across them. Sound familiar? If that wasn't enough, his arch enemy also happens to be a mad scientist – again, the ghost of *Sonic* rears its spikey head.

Crash Bandicoot seems to be borrowing more than just gameplay from previous platform greats

Visually, *Crash* seems much more interesting and individual. The game is



Crash takes 2D platforming to the third dimension, but where are the innovations?





Despite plenty of 2D levels, the PlayStation's 3D capabilities are often exploited to breathe new life into the platform genre. 'Boulder Dash' (left) is a prime example



Format:	PlayStation
Publisher:	SCE
Developer:	Naughty Dog/UIS
Release:	August (US) September (UK)
Origin:	US









The hog-ride level is similar to the Death Star level in *Star Wars*. Luscious graphics accompany the 3D platform levels (centre). Collect 100 apples for an extra life (top right)

set on three jungle islands off the coast of Tasmania, and from the levels **Edge** has seen, the designers have been heavily inspired by Indiana Jones, Duck Tales and the Game Boy classic, *Adventure Island*, in their depiction of each island. Hence, the baddies are grass-skirted warriors, giant Venus Flytraps, monkeys and turtles, and the levels (there are around 30 – ten for each island) consist of ruined temples, white-water rapids, spooky caves and tree-lined jungle passes. Importantly, it's all beautifully presented, in a kind of Tex Avery, Looney Tunes style, with brash cartoony graphics complementing the casual slapstick violence. Furthermore, the jungle setting certainly makes a change from the trippy nowhere worlds of *Super Mario 64* and *Nights*.

In terms of gameplay, *Crash* generally adopts standard platform rules: jump over chasms, avoid baddies, employ pin-point accuracy and timed jumps to avoid flaming platforms and swinging blades – the difference here is that it's all in 3D, with Crash moving in and out of the screen rather than up and down ladders.

The levels which do attempt to employ 3D as more than just an aesthetic enhancement, however, look to be more interesting – one called 'Boulder Dash' has the player controlling Crash as he runs toward the camera and away from a huge boulder threatening to crush him into Bandicoot juice. It's a little disorientating at first, but fun after a while, and certainly shows the designers are thinking of ways to exploit 3D to add to the experience.

Nevertheless, although levels exist where 3D presentation has been explored, there are also plenty that remain in 2D land. This in itself is not a crime, but considering the PlayStation's 3D capabilities, it is a shame that more isn't being done to give the platform genre a 32bit twist.

Despite grievances, *Crash Bandicoot* looks set to be a worthy competitor to Sega's precious *Nights*. As for going up against *Mario*, Crash probably doesn't stand a chance in terms of gameplay, despite its lush presentation. However, the title has a lot of charm and enough individuality to keep the PlayStation buoyant when the N64 tsunami hits the world later this year.







Each of the islands has an end of level boss. Here, you have to blow up the crazy Ripper Roo



An early end-of-level boss (top). Crash gives a cheeky wink before mounting the hog (inset). The platform levels can be tricky (above)

Quake

The PC world is full of over-hyped fodder marketed at caviar. id's *Quake*, however, is one product that may just live up to the promises



***Quake* is a true 3D environment, so the player can look up and down. The gothic architecture looks rather disturbing from the ground up**

Id is to first person shoot 'em ups what Microsoft is to operating systems. No matter what anybody writes about *Quake*, millions of people will still buy it, just as they did *Windows 95*. Perhaps rightly. Over the past few years the games market has been inundated with *Doom* clones, some good, some average, some terrible, but none matching the frenzied violence and perfectly constructed locations of the bona fide original. Until *Quake*.

Posted onto the Internet two days before **Edge** went to press, the unregistered shareware version only offers one of three sections to play, 'Dimension of the Doomed'. Nevertheless *Quake* is still impressive as a PC first-person shoot 'em up.

In terms of gameplay, *Quake* is vintage id: run around, kill things, work out how to open the doors, find secret sections – it's all here, and it's all as compulsive and addictive as ever. As **Edge** touched upon in **E**34, the Death Match is especially fun – there's nothing like firing a rocket at an opponent and watching them literally blow apart. Although the weapons pretty much mirror *Doom*'s, but with new names, there are a few that open up new tactical doorways. The grenade launcher, for example, fires ammo that scuttles around on the floor before exploding, giving the player vital seconds to clear the area or set traps for unwary enemies.

Graphically, *Quake*'s vast locales pale next to those of the awesome *Mario 64*, but, when compared with everything else on the PC, it's an impressive achievement. The background textures are detailed and realistic (although players will need to compromise between speed and resolution – prepare for some horrible pixellation if you're forced to opt for a low-res setting) and the baddies have so much more presence to them as polygonal models.

Quake's cast of demons really are a motley and terrifying bunch. When 'Dimension of the Doomed' begins, they're rather disappointing: grunts are basically the soldiers from *Doom*, and zombies, although incredibly disgusting to look at, are imps by another name. However, progress through each level reveals greater monstrosities, such as the fiends (huge, pale beasts with mouths like open wounds and elongated, slashing blade-edged limbs) and ogres





The scrambler (top) is a particularly nasty enemy, and fiends (middle) aren't much friendlier either. Peering over chasms (above) induces vertigo





The shotgun (top) was fun in *Doom*, but *Quake*'s nailgun makes it look pathetic (above)

Format:	PC
Publisher:	GT Interactive
Developer:	id
Release:	TBA
Origin:	US





Shoot monsters from above (top) or, when you're in the water, from below (above)







The motley crew (clockwise from top left): a lava molten beast from the finale of 'Dimension of the Doomed', two fiends, two ghoulish sword-wielding knights (inset) and a delightfully named Skrag

(grizzly giants with chainsaws and grenade launchers). Most impressive, though, is the scrambler, a massive lumbering demon with Freddy Krueger-esque claws, making the megademon look like a Sunday school teacher. Also impressive is the fact that all the monsters have a certain amount of intelligence and will often dive for cover if they're put under fire. This adds much to the tactical element of each gun fight.

Despite the great new menagerie of beasts, one of the best things about *Quake* is the interactivity of its backgrounds. Each level is filled with traps, tricks and puzzles, providing much





Once again, the Death Match option is absolutely excellent. Things can get a bit hectic with a level full of fellow players, though

more than an empty arena for the slaughter (which is what most *Doom* levels turned into). In 'Necropolis', for example, there's a pressure point at the end of a winding staircase which, if trodden on, opens a hatch in the wall opposite, releasing a deadly spear which flies out at the player. Similarly, 'Gloom Keep' has a section where the player has to walk along a thin gangplank while huge battering rams swing across the pathway. There are also numerous sections where small holes in walls and ceilings shoot out nails at a frightening rate, just as you're passing by. Consequently, even when there is no-one around to shoot, you still have to be aware of your surroundings.

Not only are the backgrounds interactive, they are also more interesting to explore than many of *Doom*'s locations. Each level is a multi-layered maze of gangways, tunnels, underwater passageways, lifts, secret doors and hidden sections. There are always plenty of opportunities to take pot shots at baddies while they're still too far away to respond, and here the player can also look down from ledges and fire grenades on unsuspecting ogres below. It's an immersive, incredibly convincing 3D environment which combines elements of Indiana Jones (traps), Victorian gothic (arches), and even medieval castle architecture (labyrinthine layouts) to provide an eclectic D&D arena.

Strangely though, this shareware snippet, for all its strengths, still manages to disappoint. Everything that made *Doom* the seminal firstperson shoot 'em up (atmosphere, complex levels, shocks, etc) is here – and the detailed textures and scary polygon characters bring the genre up to date. But after all this time id could have done so much more. Interactive locations, polygons, and a real 3D environment count for a lot, but are still not enough. More interesting weapons (land mines, remote-control explosives, etc), more complex traps and more varied creatures would have been welcome. Although an infuriatingly compulsive experience, *Quake* isn't the leap forward that many expected. Hopefully, a final version will prove **Edge**'s worries unfounded.



Quake*'s eightplayer network game utterly slaughters the one provided with *Doom

Fighting Vipers

Presented in 50%-complete form at the Tokyo Toy show in June, AM2's Saturn *Fighting Vipers* currently has all fighters and a twoplayer mode in place. Needed now is code optimisation to maintain a fast frame rate.

Most notable is the game's lower resolution when compared with *VF2*, a choice forced upon AM2 – in order to generate the rings in which the combatants fight, a trade-off had to be made.





The version of Saturn *Fighting Vipers* shown at the TTS was hampered by lack of speed, especially noticeable when characters fell down



Though mobile, the game's camera also needs to be speeded up before release

With the Gouraud shading afforded by the Saturn's hardware, however (Model 2 doesn't support Gouraud shading), AM2 have clawed back some of the original's visual impact with impressive results, if not quite equalling *Tekken 2*'s.

The programmers are currently researching consolatory bonuses for those who would have preferred an exact replica of the arcade machine. One enables players to remove the clothing of the mini-skirt-wearing Honey, if they win 100 consecutive fights…

Format:	Saturn
Publisher:	Sega
Developer:	AM2
Release:	TBA
Origin:	Japan

Battle Arena Nitoushiden





Japanese characters appears during fights to give the game a manga-style feel (top)

The original *Toshinden*, released in Japan in November 1994, was a hugely successful PlayStation title – not necessarily because it was the greatest combat game the world had ever seen, but because it was the first to ably demonstrate some of the abilities of Sony's hardware, such as its polygon count. Since then Takara has done everything in its power to exploit the potential of its hottest property.

Battle Arena Nitoushinden ('Nitou' means 'look like' in Japanese) is its attempt to push the *Toshinden* theme into Sega's *Virtua Kids* territory, with super-deformed characters replacing the pseudo-real fighters of the original game, and a number of comic touches thrown in to emphasise the game's lightweight approach. The humorous nature of its fighters is heightened by their amorphous appearance, reminiscent of the vehicles in *Motor Toon GP* – certain special attacks shorten and elongate their limbs to give them a cartoon feel.

'Ring outs' will not be possible in *Nitoushinden* – instead your fighter will bounce back from boundaries that surround the arenas. As well as prolonging bouts, Takara also intends this feature to enhance gameplay, giving you the ability to use the elasticity of ring borders to perform special attacks.

While hardly likely to threaten *Tekken 2*, *Nitoushinden* will appeal to those who like their games to raise smiles as well as test their dexterity.

Format:	PlayStation
Publisher:	Takara
Developer:	In house
Release:	September
Origin:	Japan



Brighter backdrops (above) and a more active 'camera' are two more *Nitoushinden* distinctions

Virtua Cop 2

AM2's popular cops 'n' robbers formula has resulted in a second stunning coin-op soon to make its way into the software libraries of Saturn owners







In *Virtua Cop 2*, the baddies don terrorist-style ski-masks rather than Reservoir Dogs-style suits and ties. Apart from that, little seems to have changed in the overall graphical look of the game. The city level (above right) looks to be an exciting and immersive location, though





Better texturing on buildings and characters gives *V-Cop 2* more detail





It's a familiar scene: civilians flee in panic while caught in the cop/baddy crossfire

With *Virtua Fighter 2* and *Virtua Cop* still riding high in the Saturn charts, it was hardly surprising to discover that Sega are well on their way to completing a Saturn version of *Virtua Cop 2*. The question is, can the sequel build on *V-Cop* without losing the original's compulsive simplicity?

In terms of structure, the designers have kept things uncomplicated, using the same three stage layout as *V-Cop*. Only the first phase – a hectic chase through the streets of Virtua City – has been revealed, but if the rest of the game mimics the coin-op sequel this should be followed by a ship-bound shoot out (the baddies are on board a pleasure cruiser taking out innocent holiday makers) and an underground slaughterfest in which players have to gun their way through tube stations and dark labyrinthine tunnels to get to the baddies' lair.

One addition to the original game's straightforward layout, though, is that at certain points the player will be able to choose a route from two alternatives. This should provide a little more incentive to go back and play again once the game has been completed – an element seriously lacking in *Virtua Cop*. Other additions to gameplay include a section where the cops hop on board a police van and chase through the streets tailing criminals – a fast and frenetic section accentuating the US cop show feel of the game.

Graphically, this early version hasn't advanced much from its predecessor, though the texture maps are neater and the city level provides a more immersive gaming arena: you actually feel as though you are storming through the city, whereas many of the set pieces in *V-Cop* looked rather two dimensional. However, its more or less business as usual for the virtua bobbies.

Virtua Cop 2 doesn't seem to be a major departure from the original. It is, however, an important release for Sega – the *Virtua* series has become the Saturn's software flagship, and if the machine is to continue gaining ground on its rival it will need another batch of killer apps to cement the successes of *VF2* and *VC*. Despite the formulaic gameplay, *V-Cop 2* should serve Sega well.



Format:	Saturn
Publisher:	Sega
Developer:	AM2
Release:	TBA
Origin:	Japan

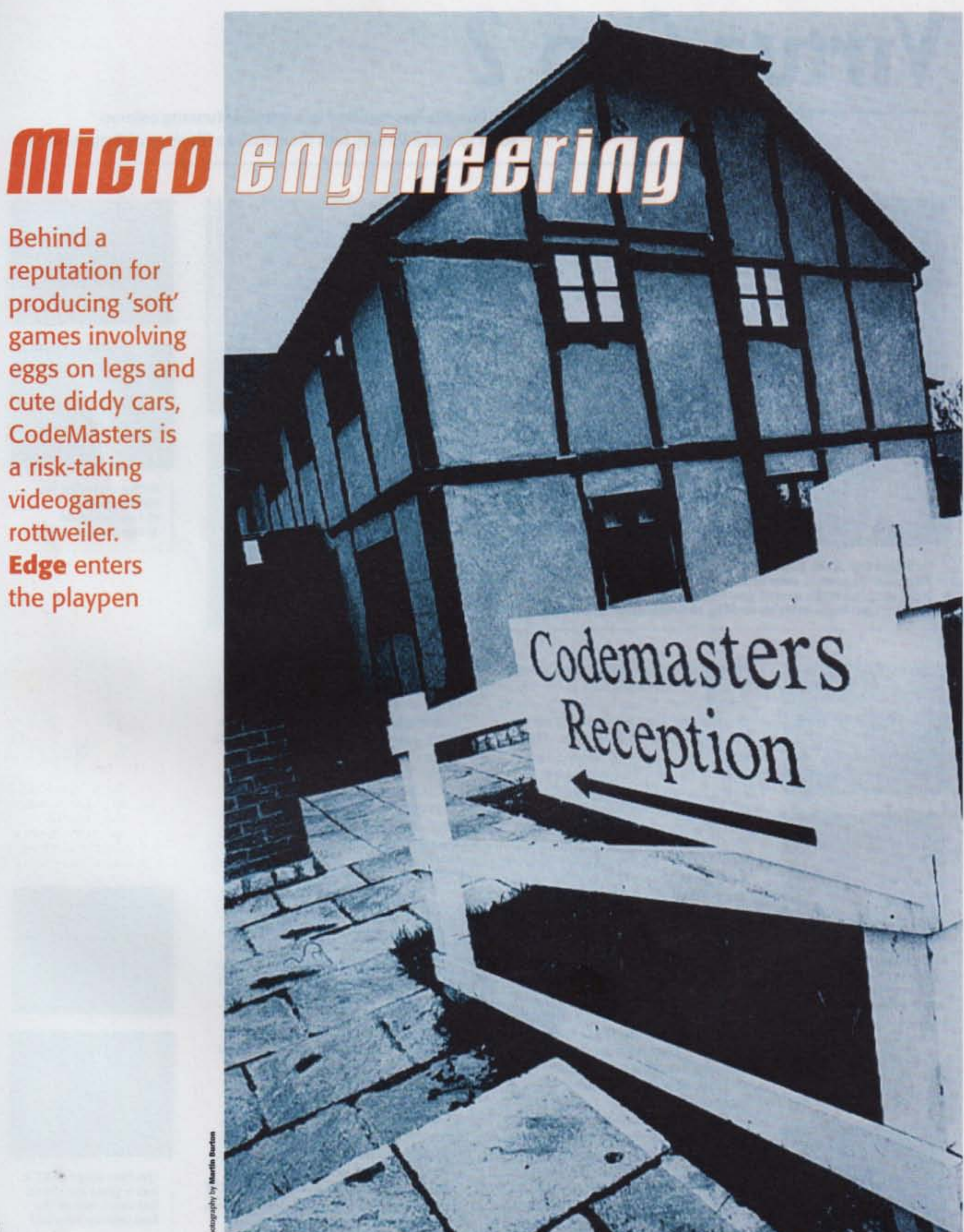




The first stage of *VC 2* has a great car chase, but can it match the fast coin-op version?

Micro engineering

Behind a reputation for producing 'soft' games involving eggs on legs and cute diddy cars, CodeMasters is a risk-taking videogames rottweiler. **Edge** enters the playpen



Photography by Martin Burton

At a time when multinational conglomerates cast shadows across the videogames industry, and mergers and buyouts become the rules rather than the exceptions, the independent software publisher is a dying breed.

Yet of the few of any significance that remain, one is responsible for delivering number-one seller after number-one seller – not games swamped with peripheral decoration but those with good old gameplay at their core.

Based in an old farmhouse in Nowheresville, Warwickshire, CodeMasters' independence gives it a refreshing air in comparison to the stiff, starchy nature of so many successful publishers of the nineties. The grounds surrounding its numerous outbuildings are picturesque, and are patrolled by Ziggy, the energetic red setter.

The company's history is an eventful one, and it began in the very earliest days of home computing. 'We lived in Canada when we were growing up, and used to visit arcades,' recalls **David Darling**, who, at 29, is the eldest of the brothers. 'At school there was a computer that we were taught to program using punch cards, as part of Maths lessons. So I had two interests: games and programming.

'The first computer we got was a Commodore PET, which our dad [**Jim Darling**, officially the brothers' first employee and currently CodeMasters' chairman] used for his contact lens business. **Richard** and I would write programs for him. Then we would borrow the machine at weekends and write our own games – text adventures and things like that.

'When Richard and I came to school in England we bought ourselves a Vic 20 [Commodore's cheap and popular massmarket 8bit home computer]. We didn't have much money so we didn't buy many games, but when we did treat ourselves to a new game we often thought that the ones we were writing were better, and so Richard and I decided we'd try and sell our games by mail order. We saved up our lunch money and took out a half-page black-and-white ad in Popular Computing Weekly. In 1982 Galactic Software was born.'

The company produced a number of fairly low-key titles (most notably a DIY game-making program), and it wasn't until the brothers linked up with some of the industry's more established players that success truly knocked at the door. 'We'd signed a few deals with several software companies at this time – between '83 and '84 – but it was the one with [budget 8bit software house] Mastertronic that gave us the break. We wrote a lot of their early hits and also became involved in sourcing games for them. So, we set up a development company called Artificial Intelligence Products – we owned half and Mastertronic owned the other half. After a couple of years we decided we wanted to set up our own publishing company.'



Development director Richard Darling (foreground) focuses on the company's games output and leaves most of the company direction decisions to his ever so slightly older brother, David

CodeMasters went on to ape Mastertronic's pile-'em-high-sell-'em-cheap approach to considerable effect, releasing a broad range of videogames. But it was a piece of hardware, not software, that pushed it into major-league territory.

'We developed the Game Genie, which we did in parallel to games as a separate venture,' says Richard. 'We were doing fewer games at this time and we were trying to think of ways to make our games better and giving them a longer life. We were thinking of adding switches to the actual cartridges so you could select the amount of lives available and things like that. We thought it would be novel if you could do it for a game but better if we could come up with some sort of attachment that worked on any title.







The 3D graphical approach of *Micro Machines v3* makes the game a visually stunning experience. Note how the camera zooms and tilts to accommodate tricky obstacles



CodeMasters forthcoming PlayStation title *Micro Machines v3* retains the same incredibly simple, yet addictive, gameplay, only this time set in a beautifully smooth 3D environment. The current frame rate is 60fps



Continued next page

Continued

'We exhibited at CES in Chicago and Galoob had a talent scout who loved it. It went on to become America's fifth-best-selling toy that year.'

Never a company to toe the party line if there are other avenues to explore, CodeMasters was one of the few companies to manufacture its own cartridges for Sega's consoles – a masterstroke considering the significant price Sega and Nintendo charge for manufacturing licensees' cartridges.

'A few other people made their own too, but it was useful because of the flexibility,' reckons David. 'It meant we could do things like the J-Cart [a Mega Drive cart with two joystick ports built in to allow four players to take part without the need for a multitap]. Normally you have to convince the manufacturer that your idea is good, but when you have manufacturing control you can go ahead on you own.'



Richard (left) and David Darling. From typical schoolboy coders to Ferrari driving, atypical company directors in ten years flat

But the company made one unique hardware innovation for computers, too. 'Oh, that! That was back in 1991,' remembers Richard. 'Basically we put 30 games on a CD that you could play on your normal hi-fi and plug your C64 or Spectrum in and load games in off the CD.'

David has mixed feelings about the product: 'It worked well. It didn't sell well. I think we were used to providing games to a very educated user base. They were used to the whole concept of buying games on cassette or disk. We didn't really appreciate the amount we'd have to spend to re-educate the users to a new way of buying games. Because we were only used to producing really good games that sort of sold themselves we didn't commit much money to marketing the idea.'

Marketing is one difficulty that a comparative minnow such as CodeMasters could face when swimming with fish as big as the likes of Electronic Arts. But David's approach to the issue is straightforward: 'Marketing budgets are generated from sales. Because we were expecting *Pete Sampras Tennis* to sell very well in France we were able to afford a TV advertising campaign. The game then went to number one over there. We're able to have big marketing budgets when we need them.'

Sometimes, however, CodeMasters' success comes as something they're not in a position to predict. 'Probably the biggest pain was when we made 20,000 Mega Drive *Brian Lara* cartridges last year,' says David. 'It was the first console cricket game and the feedback we had from retail was that no-one really thought it was going to do that well. People were ordering a few

Taking on the big boys (and winning)

When CodeMasters developed the Game Genie and Galoob started marketing and distributing the game enhancer in the US, Nintendo of America got upset.

According to CodeMasters, the Game Genie is a game modifying device for the NES which allows games players to alter the rules of the games to suit their abilities. Nintendo of America didn't quite see it like that and managed to block Galoob from selling the Game Genie. Galoob and CodeMasters didn't let things drop, however, and the case went to court. When the case was settled, Lewis Galoob Toys Inc were awarded a $15 million judgment against Nintendo of America.

The $15 million award was paid from the proceeds of the bond Nintendo posted in connection with the litigation, and while Galoob kept $11.5 million for themselves, approximately $3.5 million went to the licensors and creators of the Game Genie, CodeMasters Software Company Limited.

The Game Genie went on to sell some 1.4 million units in America. 'I am overjoyed. We were not intimidated by Nintendo's aggressive legal behaviour. Our perseverance and determination has finally paid off. Game Genie proves that innovation cannot be stifled,' said David Darling at the time.

But Nintendo of America wasn't the only videogames giant to flex its legal muscles with lil' ol' CodeMasters. A couple of years later Sega Enterprises Limited tried it on.

On Tuesday December 15, 1992, CodeMasters was served with a summons to appear in the High Court, London, by Sega Enterprises Limited.

Sega had assumed that CodeMasters products, *Micro Machines* and *The Fantastic Adventures of Dizzy* - videogames compatible with Sega's Mega Drive – infringed its copyright, since CodeMasters at this time didn't have Sega's blessing to develop Mega Drive games. CodeMasters claimed it'd always been open about its intention to produce non-infringing Sega-compatible products and that Sega had known this for many months before the summons was issued.

David Darling said at the time, 'The fact that Sega has chosen to wait so long to sue, until just before our commercial launch, shows that this is a blatant attempt to keep us from the market they, at present, control and dominate. A dominated market has many disadvantages: higher prices to consumers with less creative and innovative products. We are angry and upset by Sega's actions and will defend our rights and deliver our quality videogames to the public.'

The final settlement reached between CodeMasters and Sega is confidential. Suffice it to say, however, CodeMasters continued producing Mega Drive, Game Gear and Master System games - with Sega's blessing and without an official licence.



CodeMasters' very own cart manufacturing plant run by the company subsidiary, CM Electronics

hundred here, a thousand there and then when we put the game out into retail we sold out in three days! Orders were coming in for 10,000, 15,000 and it became really hectic. The factory went into 24-hour production. We've finished making that title now to make room for *Lara '96*, but in the end we made some 80,000 units.'

For two men renowned for their focus on gameplay, their opinions on the latest product from Nintendo – one of the biggest champions of gameplay as king around – differ somewhat. 'I've seen the demo of *Mario 64* but I think it's almost been built up too much,' claims Richard. 'It looks like a well-developed PlayStation game. It looks nice, I don't know about the gameplay, though…'

'I don't think *Mario 64* has been built up too much,' offers David. 'I really liked it and I can see a lot of American kids wanting to own it. But there's pros and cons. The cost of the media, for example. Sony's competing hard on hardware costs and they can cut the cost of the games because CDs are so





CodeMasters' 32bit update of *Sampras Tennis* is imbued with out-of-the-ordinary touches (left)

much cheaper to manufacture than cartridges – especially big carts.'

Nevertheless, CodeMasters' (some would say) belated shift in focus from 16bit to 32bit technology has ensured that the company is currently considering the prospect of developing for Nintendo's new machine.

As the face of videogaming changes, however, the Darling brothers are in no mood to meet it with a drastic change in their own approaches. Indeed, one of the company's strengths is undoubtedly the hands-on approach that Richard and David are eager to retain.

Rather than taking the money and running, their intention is to reinforce their assets and, importantly, grow.

'I've done the Ferrari thing already – in fact I've just sold my last one,' says David. 'To be honest, we only really learnt to do proper financial planning a couple of years ago. Since we've implemented the business models and had proper financial plans we've achieved every target we've set. And now that we want to grow the company and become the number one publisher in the world we can't really do that by taking a backseat.'

Micro Machines v3 (PlayStation/Saturn)

CodeMasters recently published its annual report and revealed that the CodeMasters group of companies had an annual turnover of £11.5 million last year with an impressive £2.7 million profit.

Most of CodeMasters success, especially in the nineties, has been built on few games: *Pete Sampras Tennis* sold some 250,000 units in various formats and the next version of the game, *Sampras Extreme*, is due for release later this year on PlayStation and PC CD-ROM.

The game's been in production for over a year now with a seven man team headed up by **Gavin Raeburn**. The game features, as you'd expect, lots of motion capture, some 50Mb of sound samples (the crowd react to each individual shot) and an in-game TV show called Extreme Tennis - created using sports show sets from BBC Midlands and including some 500 dialogue sequences.

CodeMasters' finest hour, though, is the Galoob-licensed *Micro Machines* range. The first incarnation appeared back in 1991 on the NES. Since then there has been a *Micro Machines 2*, *Micro Machines '96* and *Micro Machines Special Edition*, across almost any format you can think of.

Toby Egglesfield, *Micro Machines v3*'s lead artist

The range is about to be joined by the latest version, *Micro Machines v3*, on PlayStation and PC CD-ROM. The twist this time, however, is the implementation of 3D into the top-down racer's famous gameplay.

This latest version is being produced by the original *Micro Machines* creator, **Andy Graham** - who's also the lead programmer on the project. And CodeMasters is very keen to point out that although some members of Supersonic (the development team behind *Micro Machines 2*) are indeed working on some kind of racing game for another publisher (*Supersonic Racers* for Mindscape), Andy Graham is the man who started it all and he's definitely still at CodeMasters.

The game's going to retain the same 'flavour' that made *Micro Machines* such a playable game, but with major gameplay differences. Although the game will retain the overhead viewpoint there's room for dynamic swivelling camera angles. The finished PlayStation version is expected to contain some 30 vehicles (with two versions of each - a 200 polygon version for presentation and setup options and a 40 polygon version for the actual game). The vehicles are first modelled as a grey-scale 'block model' and then the textures applied. A combination of flat colour and Gouraud shading is used on the vehicles to retain the traditional *Micro Machines* look and to take advantage of the PlayStation's power. **Toby Egglesfield** is the game's lead artist and he's attempted to give the game a 'retro' look.

The vehicles are designed to perform very differently from each other and include hovercraft, camper vans, twin-hulled power boats and sports cars, with the CPU-controlled vehicles having better AI than the usual invisible arrows on the track guiding their movements.

Vehicles are also going to be able to transform mid race - from a car to a boat in the garden circuit when going over a pond, for example. There's also going to be a lot of emphasis placed on collecting cars in the game, as well as collecting power-ups (forcefields, invisibility, fireballs and so on) as you and up to three friends blast around the 50 or so race circuits (over some ten to 12 different environments). Due out in the last quarter of this year, expect further coverage of *Micro Machines v3* in future issues of **Edge**.



Andy Graham, overhead car racing game guru

Videogames 'speak' via images on a TV. Twitches of a game controller make up the language with which players 'speak' back. It's a basic dialect, but interactive entertainment would be impossible without it. And it's about to change forever...

Digital dexterity

The art of videogame controllers past, present and future



Games have made paradigm shifts in the past 24 months into polygonal, 3D, texture-mapped, multiplayer experiences. Meanwhile, the evolution of the best mechanism for controlling games – the joystick – has lagged. All that is changing, however. In this definitive analysis, Edge looks at where the joystick has come from, where it is now, and where it's heading in the future.

The term joystick (which, according to archetypal US dictionary, Websters, was originally a slang term for penis) came into nonvulgar use at the dawn of aviation to describe the airplane flight yokes that controlled the elevators and ailerons of the craft, and were located between the pilots' legs. The first use of a 'joystick' device not directly related to the control of an aircraft came during World War II (the same conflict that spawned the precursor to the digital computer). During the war Germans used joysticks to control experimental bombs, and after the war ended, joysticks became standard equipment for controlling unmanned test flights.

'German pilots experimented with wire-guided glide bombs which they controlled with joysticks,' says Paul Potera of the Strategic Development Division of ThrustMaster, a leading joystick manufacturer. 'They were launched from bombers and had flares so that the Germans could see a little red dot which they guided down to the target.' Since that time, the word has come to refer to any controlling device involving a stick which moves in at least two directions, even when that 'stick' may be a flat, cross-shaped toggle switch – more commonly known as a joypad. Nowadays, as far as common language is concerned, the term joystick refers to any non-keyboard device for controlling a videogame.

The first videogame joysticks were made in 1961. That was the year Steve Russell, a member of the Tech Model Railroad Club at the Massachusetts Institute of Technology (a haven for the first computer hackers), created the first computer game, *SpaceWar*. *SpaceWar* was a two-person simultaneous, competitive shooter, which featured controls almost identical to *Asteroids* (although, it being MIT, the game featured authentic star maps for the backgrounds and a couple of other hyper-realistic elements, including a deadly sun with real gravity and missiles that – in early versions at least – failed on a random basis). He built the game on a Digital Equipment PDP-1, and used toggle switches built into the computer readout display to control the game. To go left, for example, the player actually had to turn a 'go left' switch on, then off again – a very cumbersome procedure.

Making matters worse, to use these switches, players had to lean forward on their elbows which proved to be an extremely uncomfortable and clumsy position from which to play. In an effort to make *SpaceWar* less painful, two of Russell's fellow hackers, Alan Kotok and Bob Saunders, scrounged spare parts from the model railroad clubhouse and created the earliest descendent of today's game controllers, a small box with switches and buttons on top.

'The basic version [of *SpaceWar*] was played off toggle switches on the console, and your elbows got very tired,' Russell remembers. 'Most people eventually ended up wiring in push buttons. The PDP-1 had plug boards in the back that you could wire into, so it was a case of punching in a few wires to hook up switches as input,' he adds.

This step, replacing uncomfortable toggle switches on a panel with push buttons on an easily reachable box was the first step in the evolution of the modern videogame controller, a device designed to give maximum control with minimal hassle.

If all this is true, why hasn't *SpaceWar* received the accolades it deserves as the forefather of videogames? Russell remembers the Digital Equipment PDP-1 on which *SpaceWar* was run as selling for around $120,000, far too expensive to create any kind of consumer game. Though later Digital models such as the PDP-6 came with *SpaceWar* already installed (it was used by Digital as the memory test), the game still had a very limited audience.

It took the coin-op videogame revolution of the 1970s to bring joysticks to the mass market. Though *Pong*, the first commercially viable coin-operated videogame, did not have joysticks (it worked with a one-dimensional paddle) a few other *Pong* knock-offs, such as *Paddle Ball*, did. *Space Race*, one of the early Atari arcade games, also employed joysticks.

Joysticks took a similarly long time to reach widespread acceptance in the home console scene. The first home systems, such as the Magnavox Odyssey 100 (an analogue videogame system) and *Pong*, were dedicated ping-pong machines controlled with twisting knobs. It was only by the time the Atari 2600 Video Computer System (VCS) reached its apex in the early eighties that there were three main ways to play videogames: with a paddle (*Pong*); a push button (*Space Invaders*); or a joystick (*Pac Man*). And it soon become abundantly clear that the joystick-plus-button(s) combo was clearly the most flexible and intuitive (and hence dominant) control mechanism for electronic games, a situation that remains to this day.

Nintendo introduced the four-way 'pad' with its Game & Watch series. It holds the patent for this type of controller to this day

However, there were still a few subtle evolutionary steps between the joysticks of then and the game controllers in use today. In 1980, while most of the industry continued using standard variations of the joystick, Nintendo introduced a patented four-way directional 'pad' on one of its earliest consumer electronics products, Game & Watch. It holds the patent on this type of directional controller to this day. In 1981, Bandai Electronics used a similar controller which it called an 'eight-position action button' on a handheld game called *Space Chaser*.

Although directional pads were initially developed because they were more compact than joysticks, it was





M Network's TRON stick (left) and Atari's classic 2600 controller (right) – a joystick still regarded by many as incredibly comfortable and versatile to use

Continued next page






From left to right: CBS's driving module for its Colecovision console, developed specifically for use with the machine's version of Sega's *Turbo* coin-op; MB's four-button joypad for its revolutionary Vectrex console; the standard Mega Drive joypad; Mattel's PowerGlove device for the NES – a novel idea but ultimately a failure

discovered that they were also much more comfortable to use. While a full sized joystick worked well in the arcade, holding a smaller joystick in your hand for hours at a time tended to cause cramps. Perhaps the designers of the Mattel Intellivision took this into consideration, since it was the first home console system to use a direction pad, which it called a 'control disc'. Mattel executives said it had the 'functionality of both a joystick and a paddle'. It didn't, but that's beside the point.

Meanwhile, the Atari 5200 introduced a bold new development in joystick technology, a joystick that did not snap back to a centre position when it was released. It was not even a mild success. In fact, it was perhaps the biggest failure ever in game control, if not videogaming in general. The Atari 7800 controller featured a long, slender base with a stick at the top, designed to keep hands from cramping. Again, nice try, but the stick hurt one's hand almost as much as the 2600's clunky base. ColecoVision had no less than four controllers available for its system, from a mini joystick to a steering wheel, a trackball, and a larger 'super action controller', which was a unit featuring a handle with trigger buttons, a keypad, and a small joystick on top. Which console had the best joystick became an academic concern after 1983, when the market crashed and gamers deserted in droves to personal computers.

It took the coin-op videogame revolution of the 1970s to bring joysticks to the mass market

Even when videogames did re-emerge with the NES and then with the SNES and Mega Drive 16bit era, the joypads were essentially the same. Sure, the Jaguar and SNES added considerably more buttons, but the basic joypad format had been established. Even the 32bit era of controllers (the PlayStation included) are merely reworkings of the same basic design that Nintendo patented 15 years ago. Imagine how dull videogaming would be if graphics or sound had improved so little over the same period...

On the PC side, keyboards and joysticks have traditionally remained the only game controllers of choice for computer players. In fact, until the latter half of the 1980s, most computer joysticks still had the same stem and swivel design used by the Germans in World War II.

More importantly than just in design, computer and console joysticks differ fundamentally in the way they give information to the CPU. Until very recently, most console controllers were digital, and most PC controllers were analogue (see Analogue versus digital, page 55).

Microsoft inadvertently set the direction of personal computer peripheral design forever with the release of *Flight Simulator*. More than any game before it, *Flight Simulator* demonstrated both the PC's ability to handle realistic flight simulations, and the standard joystick's inability to handle all the range of player input needed to get the most out of the software. As more sophisticated flight simulations hit the market, CH Products, ThrustMaster, and a slew of competitors released more realistic controllers, lending an 'aviation bias' to the whole PC joystick industry that continues to this day.

In 1987, CH released the Flight Stick, which was, for the time, an extremely realistic looking analogue joystick. In 1990, ThrustMaster released the Weapons Control System, a throttle with programmable buttons that replaced keyboard commands. Later that year, an engineer at ThrustMaster named Frank Bouton designed the first joystick with the oddly titled 'coolie hat', a four way button at the top of the stick used for targeting and sight control. The coolie hat was included on the Mark I, ThrustMaster's first joystick. Capitalising on the hot flight sims market, CH Products released the Flight Yoke. Looking like the yoke of an airplane, this was wonderful for *Microsoft Flight Simulator* and driving simulations, but not well suited for military flight games.

With the increase in the PC's penetration into 'family' households, the pace of advancement in PC joystick technology has quickened.

'The industry has really moved forward the past two or three years,' says Greg Stearns, CEO of CH Products. 'Consumers are saying three things: First, "we want functionality." Second, "we want realism." And third, "we want programmability."' To that end CH Products, ThrustMaster, Logitech, and SunCom, the leading PC joystick manufacturers, have all been serving up ever more realistic-looking sticks and throttles (and foot pedal rudders) with more and more user definable buttons attached to them.

'What we have done is tried to look at the needs [of the consumer] from a realistic point of view,' maintains






From left to right: Mad Catz's analogue steering wheel controller for the PlayStation, for use with any of the machine's NegCon-compatible titles (such as *Ridge Racer*); Konami's light gun, used in games such as *Lethal Enforcers*; the rare Arcadia console's control stick, based around that of the Intellivision; Sega's Japanese Saturn joypad

From left to right: Atari's trackball device, the precursor to the mouse, was used to control crosshair sights in *Missile Command; Super Pong*, Atari's home version of its ground-breaking coin-op, was an early exponent of analogue 'paddle' controllers; Sega's mouse device for the Saturn; a Colecovision-compatible trackball






Stearns, 'and that gives us the joystick, the throttle, and the rudder pedal. You may say "But that's an aviation point of view," and to a certain extent you'd be right, but if you look at how you can control a game, there are only a couple of ways to do it. Until you start having speech-activated games, you're going to be stuck doing things with your hands and feet.

'So, we think that's the ultimate system right now: a controller for the hands, translation: a joystick and throttle; with a foot controller, translation: a pedal.'

Stearns is right, of course. It's worth realising that the military and aeronautic industries have spent many years and many billions of dollars working out how complicated machinery can be best controlled by human bodies. They came up with the joystick/pedal system – so why shouldn't the game industry copy the experts?

Still, other specialised peripherals have evolved. In 1993, Sports Sciences released the Pro Swing, a laser golf club that works with Access Software's popular *Links* golf games. In the beginning of 1994, ThrustMaster released the Formula T 1, a steering wheel and foot pedals for driving simulations. Last year ThrustMaster also released the Wizard, a peripheral for playing computer pinball.

You can even buy digital, Nintendo-style game pads for personal computers. The Gravis Game Pad, one of the first and probably the best PC game pads, has enjoyed steady sales for several years. As companies like Capcom, Sega, and Williams port arcade games to PCs, these controllers will see even faster sales.

As more and more powerful computers have become prevalent in the home, and the 32bit videogame era has replaced the old 16bit consoles, the pace of joystick innovation has increased on several fronts, particularly over the past 24 months. It had to. While standard digital joysticks are fine for side-scrollers, and analogue sticks are great for traditional flight sims, new paradigms of gameplay are starting to emerge. Paradigms previously held back, perhaps, by the lack of appropriate control mechanisms. What good is it to have a 3D world if you have to explore it with a 2D controller? And increasingly, designers are starting to question the point of a hyper-realistic driving sim if you can only see and hear – but not feel – the action. Even for traditional games, there is always a new step that can be taken in control.

When creating a new mechanism of control, the old chicken-egg catch 22 is that no-one wants to develop for a new controller until it has a substantial installed base of users, which it won't gain, of course, until there are some killer games which take advantage of it.

Surprisingly, the best hope of defeating this vicious circle lies with a company perhaps known more for co-opting others' technology than for creating its own – Microsoft. The DirectControl API in the game development SDK for *Windows 95* lends itself to the support of innovative control mechanisms. The importance of this really cannot be overstated. With Microsoft providing the driver for new controllers, a programming hassle is eliminated, and a potential installed base of more than 10 million *Windows 95* owners is handed to joystick developers on a plate. With the possible exception of providing a standard for 3D graphics acceleration, the enabling of novel control mechanisms is one of the best features of *Windows 95*, and one for which Microsoft deserves serious credit.

Another reason that Microsoft is especially eager to talk about joystick innovations these days is because now it has one, too – the SideWinder 3D Pro. This new stick uses an optical technology Microsoft says provides faster and more dependable game control.

Microsoft has removed the gears, resistors, and potentiometers (think of them as volume knobs) used by ThrustMaster and CH Products, and replaced them with a light emitting diode (LED) optical system. Tiny photosensors, placed in the base of the SideWinder 3D Pro, track the position of an LED on the bottom of the joystick and translates these movements into electronic impulses. Although similar to the way a mouse works, the method is a unique, patented design. According to Microsoft, this optical system is both faster and more dependable than potentiometers, while enabling it faux analogue or digital functionality in one stick – without the processor overhead or limited number of buttons of a true analogue stick.

In atypical Microsoft style, the designers of the SideWinder 3D Pro have also packed it with an unending list of features, some of which are impressively innovative. The stick twists as well as swivels, enabling it to perform some of the functions of foot pedal systems like the ThrustMaster Rudder System. It also has a lever that works like a throttle.

Although the SideWinder's simple lever cannot perform half the functions provided by sophisticated throttles manufactured by ThrustMaster and CH Products, and the twisting motion cannot equal the fine sensitivity of true rudder pedals, it's a good start. Additionally, it only costs

Coming soon...



The joystick pictured above is a prototype from Immersion Corporation for a force-feedback joystick. At least one major PC joystick manufacturer plans to have a joystick based on Immersion's force-feedback technology on shelves by the end of 1996. Even Sony, Sega and Nintendo are considering licensing deals, although it will be a while – probably no sooner than 1997 – before we see force-feedback based peripherals for console systems. Microsoft is also extremely interested in the technology and will probably be incorporating drivers for the device into the DirectControl API for *Windows 95*.

Edge spoke to several game developers to gauge their enthusiasm for this new technology. According to Thatcher Ulrich, vice president of software at CyberGear, 'I think it's great stuff. It adds a whole dimension of tactile feedback which we really haven't had before except in some arcade games.'

Shiny Entertainment's David Perry is worried ▸

From left to right: the seminal Colecovision joystick was lauded for its comprehensivity, but it proved uncomfortable compared to Atari's more simplistic VCS variety; Sears' classic paddle controller; Mattel's Intellivision controller, whose design paved the way for joypads as they are known today; Atari's paddle controller for its VCS console






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From left to right: the SNES's groundbreaking joypad, the first device to introduce the concept of extra 'shoulder' buttons; the NES's joypad – clean, simple and toy-like; Panasonic's feeble 3DO controller, a device that many found too stiff and awkward for prolonged use; Namco's NegCon, an analogue controller operated by twisting it

▶ Continued

about price, however. 'I think it's great and I'm all for it – I'll back it 100%. But the question is, will people buy it? People will not pay $150 for a joystick. It's not that they shouldn't, but they won't – not in a million years.'

Randy Breen, executive producer at Electronic Arts, sees the stick bringing more people into games. 'There are a lot of people who [find games] too difficult and they give up. If, however, they have some other sensation that allows them to control the car more effectively it's going to make the game more enjoyable for more people.'

Anyone interested in getting the force-feedback API for Immersion's joystick should call Immersion directly in the US on 001 800 893 1160.

about 25% of a full ThrustMaster or CH Products setup with joystick, throttle, and pedals.

Meanwhile, Sega is releasing an analogue control stick for its struggling Saturn console. Even third parties, like Mad Catz, with its PlayStation steering wheel, or Namco, with its bizarre twisting NegCon, are getting into the analogue act.

On the PC, Advanced Gravis is taking its PC gamepad technology to the next level with its Gravis Interface Protocol (GrIP). The system looks like an L-shaped multitap, with six ports on it – two being pass-through analogue ports (for traditional PC joysticks) and the remaining four for custom Gravis pads. The GrIP is a fully digital interface which enables four players to compete simultaneously on a PC, using eight-button pads. Although the GrIP sounds deceptively unimpressive to console gamers (who have long since been accustomed to classic four-player gameplay with the likes of *Super Bomberman* on the SNES) this new joypad is revolutionary for the PC, and should help usher in a new era of multiplayer PC games.

The most impressive steps toward analogue control on a console system, however, have come from Nintendo, for its forthcoming Nintendo 64. Indeed, it is Nintendo 64's sophisticated controller that excites Nintendo President Hiroshi Yamauchi most about his new baby. At a speech he gave after unveiling Nintendo 64, Yamauchi told the press that 'If you [the press] think this is just another controller, you don't know anything about videogames.' Serious stuff.

One of the things that makes the Nintendo 64's 'batarang'-shaped controller so special is that it has both

The most impressive steps toward analogue control on a console have come from Nintendo

analogue and digital functions. This three-handled controller has a traditional Nintendo D-pad over the left handle and a thumb-sized analogue stick over the centre.

'There are three types of directional devices on this controller,' says Nintendo's Genyo Takeda, whose R&D3 team created the device. 'One is a cross-key. It's the conventional device Nintendo invented. Many people tell me it's kind of common sense to use.' Indeed, a whole generation of gamers would be lost without it.

'This is the Famicom position – SNES position – using the crosshair,' Takeda explains as he holds the controller by the outside handles. He goes on to hold the controller by the left and middle handle and then by the right and middle handle. 'You can also hold it using the left position and using the right position. Each way gives you a different kind of controller, so we will probably [explain which controller position to use] in each game,' he says.

Typical of Nintendo's tight-lipped security, Mr Takeda refuses to reveal much about the inner workings of the new controller. He admits, however, that the centre joystick is not really analogue by the strictest definition of the term, but that it has been engineered to emulate an analogue joystick. Edge has not yet been able to confirm (no joystick was available for dissection) rumours that the Nintendo 64 'analogue' controller is actually an optical one, like the Microsoft SideWinder.

According to Mr Takeda, R&D3 experimented with several game controllers before settling on a final product. 'We tried many different types [of controllers] and prototypes and we threw them away,' he says. This is not surprising. Along the way to any high-tech revolution (and game controller technology is no exception) there are always evolutionary dead ends and products introduced too soon for their own good.

'We tried a motion-sensor wristwatch,' explains Mr Takeda. 'We even went so far as to make a prototype and applied for a patent. Everything was good. But players didn't understand the internal mechanism and they had trouble controlling it, so we abandoned it.'

Indeed, the road forward in game control is littered with the wrecks of failures. If the Atari 5200 was the first massive commercial control failure, it was certainly not the last. Sega tried for budget 'VR' appeal with its Activator, a hexagonal device that sat on the floor and (supposedly) sensed body movements (such as punching and kicking), translating them into game commands. In addition to making the user look ridiculous, it was woefully inaccurate and was supported by only a few dedicated titles.

Another glorious failure was the DataGlove, from Mattel. It was another 'VR' controller that certainly looked impressive, but didn't really offer anything more than a regular NES pad (in the way of game control, at least), proving to be simply a cumbersome, inconsistent novelty.






From left to right: Atari's keyboard device for its VCS (used to operate the machine's BASIC programming cartridge); the dreadful Jaguar pad from the same company, Nintendo's Virtual Boy controller (whose weight is considerable due to its housing of four AA batteries which power the entire unit); Microsoft's SideWinder stick for the PC

From left to right: Sega's Saturn joypad, redesigned and recoloured for the western market; the ThrustMaster joystick, compatible with PC setups; the button-laden throttle unit from the same manufacturer; the first home controller, an analogue, twistable device, introduced with the Magnavox Odyssey console









Years later, however, the data glove concept refuses to die. 'We've taken a look at a data glove,' admits CH Products' Stearns, 'but it's so expensive that until the price comes down, it just doesn't make a lot of sense.'

Perhaps a more damaging control failure was the CyberMan, from LogiTech. Although it was nominally a six-degrees-of-freedom controller (a device capable of controlling objects in real 3D space – up and down, as well as north, east, south, and west) it was expensive, poorly made, and largely unsupported. At the Computer Game Developers' Conference in March, 1994, LogiTech literally could not give them away.

The failure of the CyberMan probably set the adoption of 3D control in the guise of six-degrees-of-freedom joysticks back several years. 'A lot of people spent a lot of money [on the CyberMan],' says Stearns. 'They got screwed and they're kind of saying, "I'll never do that again."'

'A six-degree-of-freedom joystick is a good idea,' Stearns continues, 'but until you can refine it a little bit better and then convince the public that it's something it should have, it will never really sell. So the next one that comes out on the market has to be very well thought out and it has to work really well,' he concludes.

So, true 3D control remains elusive, which is somewhat disappointing, considering that back at the dawn of videogaming the Fairchild Channel F (an obscure Atari 2600 precursor) had a controller that – technically, at least – offered six degrees of freedom. (There were, however, no games that took advantage of this ability: but this was not a surprise, since its graphic ability paled even next to the 2600).

Still, the gaming community is getting closer. The PlayStation controller, impressive because of its ergonomics alone, has a set of four shoulder buttons arranged in a two-by-two matrix, which enables it some rudimentary 3D control when paired with the D-pad. The diamond shape of the standard buttons could be easily used as another D-pad for 3D control as well.

But more than any other advance in controller technology, force-feedback joysticks promise to open up whole new ways of experiencing a video or computer game. 'It's basically a joystick that is an input device, like a traditional joystick, but also an output device – the computer can command forces to the joystick handle and create a whole variety of different sensations,' explains Louis Rosenburg, president of Immersion Corp and designer of Immersion's force-feedback technology.

Analogue versus digital

Analogue joysticks are controllers with continuous and varying 'resistive value'. The joystick can detect degrees of movement, as opposed to the simple on/off of a digital joypad. In terms of videogames, this translates to a situation in which the further you push an analogue stick, the faster your character moves or the more sharply your car turns.

A car steering wheel is a good example of an analogue input device. To merge into another traffic lane you turn the wheel slightly. To go around a corner requires a more severe turn. To make a U-turn the wheel must be forced to its limit. Inside the analogue joystick a potentiometer (a variable resistor, like a volume knob) changes the amount of current running from the stick to the computer, enabling the computer to know exactly how far and in what direction the joystick has been moved. These signals are then translated into game instructions.

Don't assume analogue technology is necessarily complex, or indeed new, however. The old 'paddle controllers', which drove *Pong* and similar games, are also analogue devices, but with the ability to control motion along only one axis.

'Analogue joysticks have been part of the PC scene for ten or 15 years, and they really haven't changed much in that time,' says Scott Schulte, a product planner working in the Advanced Consumer Devices division of Microsoft. 'They had two buttons, now they have four buttons: but the technology inside is basically the same.'

The disadvantages of analogue joysticks unfortunately outweigh many of their advantages over digital controllers. Because they have such a huge number of possible positions, up to 17% of the CPU's processor power must be dedicated to continuously checking the state of the joystick.

In contrast, digital game controllers (such as the Saturn's and PlayStation's) feature the all-or-nothing language of binary notation. You cannot make game characters run faster by squeezing harder: they either move to the left or they don't. Clever coding, and the detection of the length of a button press, can give greater control, but the limitations are still huge.

Digital joysticks and joypads work the same way as modern calculator buttons or computer keyboards. On a printed circuit board in the casing there is a disconnected circuit. When the joystick is pushed in a certain direction a small round pad made of conductive material presses down, completing the circuit and sending a signal back to the CPU. This is also the way a joystick's fire buttons work.

The chief advantage of digital controllers is that they are less expensive to build and more sturdy than analogue joysticks. Also, at least on the PC, digital joysticks don't suck processor power. Instead, the digital stick updates the CPU on its position every eight milliseconds, so more processor cycles can be devoted to the business of running the game itself.

A third control technology has not yet been utilised in many game control devices, but this is likely to change over the next two years. The mouse (and some trackballs) uses an optical system. When the mouse ball moves, it spins one or two drums. Inside these are LEDs, the light from which shines through holes in the drum to a sensor which then returns data to the computer. Based on the speed and direction in which the drum spins, the cursor moves appropriately on the screen, enabling extremely precise control.

The N64 pad is purported to employ similar technology, and it has set an instant trend. Saturn owners will get a similarly styled controller bundled with *NiGHTS*, and a PlayStation equivalent is inevitable.







An analogue stick takes centre stage on the Nintendo 64's controller (left); Sega's reply for the Saturn (Japanese version, centre, western version, right) uses a more pad-like analogue device

From left to right: Sony's PlayStation joypad, whose development period took it through no less than eight mocked-up designs; Sega's analogue flight stick for the Saturn; a PC-compatible stick from prolific suppliers Gravis; an infrared cordless stick, looking more like something out of Star Trek than a videogaming accessory









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From left to right: the unique, pistol-like Super Action joystick controller, designed for use with the Colecovision; the F-16 Flight Stick from CH; SNK's robust, near coin-op-quality joystick for the original model of its high-spec Neo Geo console (which was accompanied by near coin-op-quality prices); the twee NES Wizardy controller

How does it work? 'There are actuators [mechanical devices] on each of the axes,' explains Rosenburg, 'so the computer can independently command a force to the X or the Y axis. It's much more sophisticated than a traditional joystick. It has its own microprocessors, actuators, power, and electronics to drive the actuators. Essentially, it's a robot. Indeed, the best way to think of it is as a robot that looks like a joystick that sits on your desk,' he adds. Exos and some others are also working on force-feedback devices, but at press time, only Immersion has inked firm production deals with leading manufacturers.

To understand how it feels to use this kind of controller, imagine you're moving a dot around a TV screen (as in one of the simple demos Immersion has developed to show off the technology). Also imagine that on the screen are several 'springs' (triangles touching end to end). As you move the dot against the spring and press 'down' you begin to feel resistance from the stick, which

More than any other advance, force-feedback joysticks promise to open up whole new ways of experiencing a videogame

changes in a realistic way as you push further down on the spring. The force also changes depending on the type of spring. Another demo puts a 'puddle' (a blue circle) on the screen. Moving the dot around most of the screen feels exactly as you would expect, like moving a mouse pointer. But when the dot is in the puddle, moving the stick produces a sensation identical to that of stirring paint. It really has to be felt to be believed.

In another demo, players control a paddle, à la *Pong*, with one key difference - the paddle is made of 'rubber' and the ball bounces from it. The further it bounces, the more reactive force you feel when it hits. The combination of visual cues with physical ones makes the experience more truly immersive than any advance in graphics or processor technology Edge has seen. Playing two-player Pong with force feedback joysticks enables players to go out and physically wrestle with an opponent for the ball. Even with extremely simple line graphics, force-feedback *Pong* beats anything the 32bit systems can offer on their own - in terms of true immersion and a feeling of realism.

'Basically the simplest game in the world becomes very, very interesting when you add force feedback to it,' offers Rosenburg. This could be the understatement of the year. Certainly, the effect is much less impressive when outlined on paper than actually experienced. Faced with the term 'active feedback', most people instantly think of arcade controllers (such as *Daytona*'s steering wheel) that offer resistance to turns and shake when you crash, or guns that stutter with each shot. True force-feedback can handle those tasks easily, but it provides much more than that.

'The way current joysticks work in the arcade, they're not really doing modelling of sensations, they're just sending out this canned routine that the player feels,' says Rosenburg. (For example, the *Daytona* player gets the same 'jerking' every time he hits a wall, no matter how fast he's going or what kind of wall it is.)

'What we can do is really model the dynamics of what it should feel like when a car bumps into a wall, or when a ball hits into a paddle,' he adds. 'Our device has far higher performance. It's sort of like the difference between the fidelity of a Sound Blaster - where you can create music - as opposed to an old PC speaker that just makes buzzes and beeps. We can simulate the real physical dynamics of anything: gravity, a texture, a spring, a rubber band. We can simulate mathematically what those things are like so it will feel real, exactly like a real spring or rubber band or whatever,' he concludes.

CH Products' CEO Greg Stearns sees active force feedback as the next level in computer and videogames. 'Right now we amaze the eyes and the ears. Now, with force feedback, we can add one more thing to the list of "feel goods".'

Not only will this technology enhance existing games - enabling you to feel the road conditions in *Sega Rally* or *Ridge Racer*, or turbulence and G-forces in a flight sim, it should open the way for entirely new types of games, where tactile feedback replaces graphics as the premium experience delivery mechanism. Gamers can then look forward to a true revolution in gaming.

And then the next step?

'You don't have any smell things out there,' ponders Sterns. 'Maybe there will be software you can smell. I doubt it, but...'







From left to right: a typical Wico 9-pin-DIN-plug joystick, one of a number of the company's range made popular during the Commodore 64's heyday in the mid-eighties; SunCom's Slik Stick; Fairchild's distinctive-looking Video Command device; Atari's attempt to redesign its popular VCS joystick (see page 51), which most gamers deemed a failure

Nintendo's day of reckoning

As Japan sells out of N64 units and the rest of the world hangs in pre-release limbo, Edge lifts the lid on Nintendo's killer toy. Indomitable powerhouse or Pandora's box?



On June 23, the Nintendo 64 became the most powerful home videogames system in Japan. Does this guarantee success? Not necessarily – in their time, so were the Jaguar, 3DO, and Neo-Geo. Case closed. So what is Nintendo 64's Achilles' heel? And what could possibly lead to the game industry's heavyweight player losing its title belt?

Shigeru Miyamoto's *Super Mario 64*, which made its debut in almost complete form at May's E³ (Electronic Entertainment Expo) in Los Angeles, is possibly the single greatest videogame ever created. The Nintendo 64 is also, indisputably, the most powerful videogames hardware ever released for the home. Those two facts alone, combined with Nintendo's $54 million US marketing push for the winter holiday season, will undoubtedly result in a total sell-out of the 500,000 Nintendo 64 units allocated to the US market in 1996. (Bear in mind, however, that this means more than $100 is spent marketing each unit sold.)

Don't be surprised if most of those units are presold long before the release date. The next 500,000 US units, to be shipped between January 1 and March 31 (when the UK will be, hopefully, receiving its own Nintendo 64 units) also will sell out, if for no other reason than the huge demand created by the shortage of units during the holiday season.

But what then? Wowed by *Super Mario 64* and with the Nintendo hype machine gearing up to full power, it's easy to believe Nintendo will dominate the games industry, pushing the PlayStation and Saturn aside while simultaneously countering the continued encroachment of the PC into console territory. When viewed with a more dispassionate gaze, however, it's clear that the N64 as a hardware platform (and, in fact, Nintendo as a company), carry a great deal of excess baggage that could well sink the ship.

In this analysis, **Edge** will start by reiterating what everyone already 'knows' – the ten reasons why the Nintendo 64 will be an overwhelming success. Then, a list that no-one outside Sony and Sega wants to admit – the ten reasons why the N64 could fail. Inevitably, some will make their way into

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both lists, such as the 'Dream Team' analogy (number six in the reasons why Nintendo will succeed and number six in the reasons why Nintendo could fail). And certainly, most will cause controversy...

Ten reasons why Nintendo 64 will succeed

1 *Super Mario 64*

Without question, the Nintendo 64's raison d'être. The fruit of over two years of development time, *SM64* has evolved into an epic manifestation of 3D game design. Instead of simply implementing the established *Mario* play elements in a forced, pseudo-3D perspective, Nintendo's in-house designers, under the direction of Shigeru Miyamoto, have truly broken the mould. Building an unprecedented level of freedom in *Mario's* world, it's clear that *Mario* has been designed to be all things to all people. Initially open-ended with little restrictive game framework to adhere to, *SM64* immerses the player in a world that's open for exploration and that serves as a playpen to acclimatise the player to the 3D environment. Then, gradually, as the levels open up, the game begins to reveal its true scope. There are jaw-dropping technical accomplishments, fiendish puzzles, oddball challenges and heaps of Japanese-tinged humour. Whether *Mario 64* is indeed the world's greatest videogame isn't yet clear, but it's certainly a staggering achievement. Without it, N64s would still be sitting on Japanese shelves.

> The fruit of over two years of development time, *Super Mario 64* has evolved into an epic manifestation of 3D game design

2 Shigeru Miyamoto

For Nintendo, it's always been about Shigeru Miyamoto. Hired by Nintendo Chairman **Hiroshi Yamauchi** in 1977 as the then playing-card and toy company's first staff artist, he created Mario for the original *Donkey Kong* coin-op and never looked back. He is arguably the greatest videogame designer in the world (Sega purists might argue that **Yu Suzuki** and **Yuji Naka** are of equal brilliance), and his games have sold more than 100 million units worldwide. It was Miyamoto-san's incredible launch trio of *Super Mario World*, *F-Zero* and *PilotWings* that assured the success of the 16bit Super Famicom in Japan almost six years ago. With Miyamoto and the rest of Nintendo's in-house teams developing exclusively for N64, the only way to get the absolute cream of software titles is to buy 64bit.

3 Serious business muscle: Mr Yamauchi, $4 billion cash in the bank, and lots of experience

According to conservative estimates, Nintendo has around $4 billion in the bank. Which translates to a lot of marketing muscle. In the US it'll be spending $100 marketing dollars for every N64 system shipped in 1996 - between television, print, and co-marketing campaigns with cable channel Nickelodeon, Kelloggs, and Blockbuster Video, the Nintendo 64 is expected to permeate the consciousness of Nintendo's main targets - parents. The company plans to manufacture five million N64 units by March '97.

4 That 'Nintendo' badge...

In the mid-eighties, when Nintendo had a near-monopoly on the 8bit console market, the term 'Nintendo' became almost generic. It wasn't 'little Johnny's playing a videogame', but, 'little Johnny's playing Nintendo'.

Even now, among non-gameplaying adults, the terms videogame and Nintendo are synonymous. Since Nintendo is aiming its high-tech system at younger children, parents will be doing most of the buying, and if the only videogame company they know is Nintendo, a purchase decision will essentially be impulsive, especially considering the marketing blitz outlined above.

Beyond parents, though, there is a whole generation of Americans who grew up with Nintendo's 8 and 16bit products as their game platform of choice. Estimates of the number of consumers who have been waiting for Nintendo 64 to ship before making the jump to next generation hardware run into the millions. Twenty million people bought 16bit SNESes and then proceeded to spend the next four or five years arguing with Mega Drive owners about



He's special, and doesn't Nintendo know it. As the Kyoto company's most treasured intellectual property, Mario now stars in possibly the greatest videogame ever created



By the early nineties, one in three US households owned an 8bit Nintendo. But in wake of the infiltration of Sega and Sony it's debatable just how much clout the Nintendo 64 brand will carry in the massmarket

which was better. If Nintendo can use its valuable name to convince even 10% of those 16bit owners to go with the N64, it will have beaten Sony's and Sega's combined efforts.

5 64bit versus 32bit

The Nintendo 64 is clearly the superior hardware when compared directly to Sega's Saturn or Sony's PlayStation. The true 64bit RISC CPU runs at 93.75MHz (compare this to the twin 32bit Hitachi RISC CPUs in the Saturn, which run at only 28MHz, or the PlayStation's 33MHz R3000A RISC CPU), and the console sports hardware-based z-buffering, tri-linear mip-map interpolation, perspective-correct texture-mapping and anti-aliasing.

According to a Nintendo spokesperson, the console sports the power of ten Intel Pentium chips, and from a purely technical point of view, *Super Mario 64* and *PilotWings 64* look far superior to anything on a 32bit console or even a Pentium-based PC with a 3D graphics accelerators – the video technology of the system is nothing short of amazing. It handles incredibly sharp graphics and features little of the polygon seam show-through or clipping and culling glitches that are commonplace on both the Saturn and PlayStation.

Essentially, consumers who wish to own the best hardware simply must own a Nintendo 64. And even though gameplay will shine through in the end, graphics have an important role to play. If they didn't, there would never have been a reason to upgrade from 8 to 16bit.

6 Nintendo's 'Dream Team' policy

By confining the number of thirdparty licensees to limited 'Dream Team' members, and keeping the majority of development in-house, or in second-party arrangements with quality development studios, Nintendo hopes to assure that every game released on the system will be a first-class title. Nintendo's high standards of quality control are legendary, and the company is definitely going for quality rather than quantity with the software for Nintendo 64. A mass of mediocre titles sunk the Atari 2600 (and – cynics will say – may be sinking the PlayStation now), and Nintendo has no intention of letting the same fate befall its 64bit baby.

What many sceptics don't realise, though, is that the 'Dream Team' has essentially been a marketing tool used outside of Japan. In its domestic market, Nintendo has secretly been courting its own established 'Dream Team' comprising companies such as Capcom, Namco and Konami, who consistently delivered quality software for Nintendo's 8 and 16bit machines. In July, NCL will announce 20 Japanese-developed N64 titles.

7 A revolutionary controller

The analogue joystick is a quantum leap beyond the eight-way, digital D-pad of old, and is able to deliver play



Two reasons why the Nintendo 64 will succeed: Shigeru Miyamoto, creator of the *Mario* series, and the N64 analogue joypad which enriches games with its subtle controls

experiences that were never previously available on a home console system. And although Sega and Sony also have analogue offerings in the works, only Nintendo's is native – planned for and expected by every design team.

Expect the odd game on the Saturn or PlayStation to support analogue control, but the Nintendo 64 is where the analogue stick will truly come into its element.

> The Nintendo 64 is where the analogue joystick will truly come into its element

8 Cartridges have many advantages over CDs

On CD-based consoles, the time between a machine being switched on to the start of the game can take a minute or more (and triple or quadruple that for PCs and Macs). With a cart-based system, games can be played immediately (in theory), and there are no annoying load times between levels. While this isn't a huge



NCL's *Wave Race 64* was one of the titles to make excellent use of the N64's analogue controller





E[3] was a testing time for Nintendo. In-house Japanese projects under the direction of Miyamoto (such as *Wave Race 64*, left) played well, while the full suite of 'second party' projects (right) received a rather mixed reception

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E³ belonged to Nintendo, but some analysts think it has already lost far too much market share to compete

factor, and hasn't hampered the success of the PlayStation or Saturn, it should lend to a feeling that the N64 is the faster system. Carts are also more durable.

Most significantly, however, is the hardware saving that supporting cartridges gives Nintendo. Without the need for either a CD-ROM player or a separate RAM cache for data to be loaded into, Nintendo is saving itself at least $50 on a manufacturing level, translating to at least $100 off the street price. Thus, it's not unreasonable to regard the N64 as a $250 console without a CD-ROM drive, and the PlayStation as a $100 console with a CD-ROM drive.

9 DD64 promises unique possibilities

The writable DD (disk drive) 64 is one of the most exciting reasons to support the Nintendo 64. By enabling gamers to store huge amounts of save-game data, custom characters and custom worlds become a reality, and even more exciting is the prospect of update disks for games, rather than having to buy a whole new cart. A writable disk also will be key for any Internet strategy that Nintendo decides to pursue, enabling software to be downloaded and written directly onto disc. It's no secret either that *Zelda 64* is planned for the DD64, making it a must-buy.

10 Four controller ports

Everyone who has played one agrees - four-player games, such as *Super Bomberman*, are far more entertaining than one or twoplayer games. By designing four ports into the machine, Nintendo has clearly acknowledged this. With extra controllers being sold at an inexpensive price ($30), expect to see many games take advantage of this, like *Super Mario Kart R*, *Wayne Gretzky Hockey*, and *NBA Hang Time*. Developers seeking to create similar games for the PlayStation or Saturn will be hindered by the need to provide an expensive adaptor, so this should add yet another edge for enhanced gameplay on the Nintendo 64.

By having four controller ports built-in, the N64 opens itself up to multiplayer possibilities

Ten reasons why Nintendo 64 could fail

While the Nintendo 64 will certainly be a runaway success among hard-core gamers,they will not, ultimately, determine the fate of a system. Rather, it's the millions of casual gamers who will, in the end, decide who wins the next generation console wars.

Chief among these casual purchasers are the gift buyers - parents, aunts and uncles - who buy systems for those who can't afford the games themselves (ie kids). There are many reasons why they may eschew the Nintendo 64 for a Saturn or PlayStation. Chief among them are the high costs of the system and its games, and the fact that there will be little thirdparty software on the shelves - traditionally an easy benchmark for judging the success of a platform. If the N64 doesn't live up to Nintendo's own expectations, it is likely to be for the reasons outlined below.

1 It's just too late

The Nintendo 64 has suffered horrific delays. Twice. Originally scheduled for a 1995 release, the launch was postponed until April of this year. Then, it was delayed again.

These delays have benefited Nintendo's competition. First, it has enabled them to sell more hardware units at a higher price (if only to those gamers sick of waiting for the Nintendo 64). Second, the extra year's head start now enables Sega and Sony to compete with second- and even third-generation software, as opposed to merely their opening salvos. Many observers would argue that this has fudged the distinction between 32 and 64bit, robbing Nintendo of its advantage.

There is a historical precedent for those who would predict this scenario: in the 16bit era, Nintendo's delay in bringing the SNES to US shores enabled Sega to gain a foothold that ended up costing Nintendo just over half of the market share - despite the SNES's obvious technical superiority over the Mega Drive (aka Genesis in the States).

This time, however, Nintendo faces two tough competitors, who will have had more than a year's head start by the US launch date of September 30. Sega expects to sell one million units in the US by the end of 1996. Sony says it'll do better than that. At best, Nintendo will sell 500,000 into the US market. Any dreams of the videogaming equivalent of an easy 'three-day war' are based on naivete.

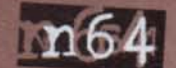
By January 1, Sony and Sega will have reached the critical mass of hardware sales needed for long-term success, and Nintendo will only be halfway there. And three-way races in the videogames business always seem to boil down to two strong competitors and one pathetic also-ran.

Nintendo's stringent quality-control mechanisms should also ensure that most software ships late, too. Hiroshi Yamauchi has shown no hesitation in postponing the release of games at the whims of his developers. This can only lead to even further delays.

2 It's too expensive

When the Saturn cost $399 and the PlayStation $299, $249 looked like a great price-point. But with the Saturn and PlayStation now less than $200 (and £200 in the UK), Nintendo suddenly finds itself in the uncomfortable position of being the most expensive console on the block. And while Sega and Sony can include a game with the console at a cost to themselves of about $3, for Nintendo to do the same would cost about ten times that, in terms of cost of goods. A Nintendo 64 plus *Super Mario 64* will weigh in at about $320 in the US - a hefty price-point considering Nintendo expects parents to buy this system for their children as a toy.

Most Nintendo 64 carts will retail for between $69.95 and $79.95 (most likely £50 to £70 in the UK). Thanks to the high cost of silicon, Nintendo simply cannot compete on price for games, especially in the (albeit unlikely) event that a price war breaks out. The high cart price will not sit well with the value conscious.





Nintendo 64 cartridges like *PilotWings 64* (above) might be a similar physical size to SNES carts but at an average ROM size of 64 Mbits (8 megabytes) they represent a frighteningly high outlay for publishers

Also, consider that while Nintendo 64 is the most expensive system, it is being targeted to the lowest age demographic. Parents are probably just as likely to buy a cheaper system with cheaper games, notwithstanding the psychological implication that by being more expensive, the Nintendo 64 is the 'premium' system.

3 The target audience doesn't care about 64bit

Focus groups have revealed that most children under about 12 years of age simply can't tell the difference between 16bit and next-generation titles. They are just as satisfied playing a side-scroller on a SNES as they would be playing *Wave Race 64*.

Couple this with Nintendo's stated intention to continue heavily promoting the SNES and it's not difficult to see that many parents who go into the store with the idea of buying a Nintendo 64 will, in fact, walk out with a SNES - glad of the extra cash still in their pockets.

Older gamers - who will definitely care about the difference between 32 and 64bit - may be far less likely to buy a Nintendo 64 once it is marketed as a 'kid's system'. Sega and Sony will surely exploit this in their own marketing. And, in a 'which-is-cooler?' war that will be fought largely on the playgrounds of schools, game quality may take second place to perceived hipness. Sure, the hard-core gamers will still buy Nintendo 64, but - as stated earlier - the hard-core gamer makes up only a small fraction of the market. Indeed, most people play games like *StarFox* or *Mario Kart* despite the cute characters, not because of them.

4 One trick pony?

Super Mario 64 is undeniably a landmark in videogaming, destined to redefine interactive entertainment. But it is the fruit of more than two-and-a-half years of development, unlimited development resources, the winning touch of Shigeru Miyamoto, and is built on the most successful videogame character of all time.

There are absolutely no reasonable grounds to assume that any other Nintendo 64 game will match *Super Mario 64*'s level of achievement for a very long time - in fact, NCL chairman Hiroshi Yamauchi recently conceded that if three games came close this year then they would be fortunate. Indeed, many thirdparty publishers with Nintendo 64 games in development were scrapping half-completed projects and heading 'back to the drawing board' in the wake of *Mario*'s 64bit debut at E³.

Aside from *PilotWings 64* (which also benefits greatly from the nostalgia factor) and - arguably - *Wave Race 64* and *Shadows of the Empire* (which doesn't play as good as it looks), much of Nintendo 64's other software, like *Ultimate Doom* and *Killer Instinct 2*, doesn't offer significant enough improvement over the 32bit games of Sega and Sony.

As a by-product of Nintendo's quality-over-quantity software strategy, there will be far fewer games available for the Nintendo 64 than there will be for a Saturn or PlayStation, which had more games on shelves last Christmas than Nintendo will have in development for the N64 by the end of 1997. And because there will be fewer games available, the system will look far less appealing to parents when they walk into the store, since one of the main ways a system is judged by casual purchasers, like parents, is by the number of titles available, not the quality of those titles.

> Many thirdparty publishers were scrapping half-completed projects and heading 'back to the drawing board' in the wake of *Mario*'s 64bit debut at E³

5 Thirdparty developers hate cartridges

Compare cartridges to CDs: carts cost between £20 and £30 to manufacture, CDs cost less than £3. Carts can take up to three months to make in volume; a batch of CDs can be turned around in days.

The consequence? Publishing games on cartridges can be a huge risk, requiring both an enormous up-front investment of cash, and the gamble of having to predict what the market will be demanding several months ahead of time. Underestimating means lost sales; overestimating means a vast amount of money tied up in almost worthless inventory.

Becoming familiar with the advantages of publishing on CD for the PC, PlayStation and Saturn, it's easy to see why publishers will not be itching to return to cartridges. They simply can't hold as much data as CDs. Although most games today do not even come close to using the full CD in any meaningful way, developers are now familiar with the freedom that CDs offer, and many gamers have come to expect FMV cut-scenes as well as Red Book audio soundtracks - both of which require a CD format.

Games such as *Resident Evil*, with many prerendered backgrounds, simply would not fit on a sub-£100 cartridge. Even a simple side-scroller like *Guardian Heroes* has an executable file that's larger than 272 Mbits (34Mb) - around four times the size of the first thirdparty N64 titles.



When the N64 finally arrives in the UK next year Sony and Sega will have gained a large share of the market. The US machine (above) stands a better chance

For good or ill, many developers have invested millions in developing multimedia studios, and (for good or ill) they want to use them, if for no other reason than to justify the expense to their shareholders. Many developers seem convinced that their titles will not sell without a multimedia flash, which just can't be provided on the cartridge format.

Nintendo claims that it can survive without substantial thirdparty support. But that's exactly what Atari said about the Jaguar. A further problem is that some third parties may be scared of Nintendo 'cheating'. In late 1994, Shiny Entertainment's *Earthworm Jim* launched for the SNES on a

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16Mbit cartridge. Two weeks later, Nintendo's own *Donkey Kong Country* was released on a 32Mbit cart, and sold for $10 less. 'How the hell are you meant to compete with that?' bemoaned Shiny's **Dave Perry**. He has a point.

Nintendo controls every aspect of the cart manufacturing process (even to the point of owning the cart ROM manufacturing plant), and it expects to make a profit over and above its licensing fee, at every step of the way. Of course, this vertical integration also gives Nintendo the ability to make its own cartridges as cheaply as possible.

Very few game developers around the world have come close to exploring all the possibilities of 32bit, let alone prepare themselves to start pushing the envelope of 64bit game development.

The skill required to make a great 3D game goes far beyond the skill set needed for a 2D game, in terms of character design, world creation, and gameplay elements. The camera angle alone can cause a multitude of headaches.

Some members of the 'Dream Team' are companies lacking a proven track record for making great videogames

To be fair, this problem faces all games companies as the switch to 3D is attempted, but for the N64 to be a hit, it needs differentiation now, especially since only a few titles will be introduced this year.

Because games need to be written exclusively for the Nintendo 64, developers will be unable to return development costs across several platforms, a key strategy today, when the number of units sold will pale in comparison to the amount of 16bit software that could be moved just three years ago.

6 'Dream Team', or nightmare?

If asked to put together the dream team of game developers to create the ultimate software line-up, most gamers would include outfits such as SquareSoft, Namco, Konami, Capcom, Psygnosis, and Bullfrog. Certainly, the likes of GameTek, Titus, Acclaim, Spectrum Holobyte - and then such obscure, unproven entities such as Angel Studios - would be near the bottom of **Edge**'s list.

Cynics can easily argue that - with a couple of notable exceptions, like Williams and LucasArts - some members of the 'Dream Team' are companies lacking a proven track record for making great videogames in the cutthroat world of multiformat publishing. Instead of being the cream of the world gaming industry, they are, in fact, those who see an alliance with Nintendo as a way of either temporarily escaping from market realities, securing an easy ride into mainstream game publishing, or who see Nintendo 64 publishing as a way of getting rich quick.

Despite what Nintendo may have people believe, game creation is not a science and there is no way to guarantee success. Very often, the best games come out of small, obscure developers with little or no track record (take Id's *Doom*, Blizzard's *War Craft*, Alexei Pajitnov's *Tetris* or anything by Geoff Crammond, for example). Often the best policy is simply to throw enough mud, and hope that some sticks. Indeed, much of Nintendo 64's initial line-up falls far short of what has been promised.

7 The brand loyalty risk

Conventional wisdom states that one of Nintendo's chief advantages is the Nintendo brand. The name Nintendo was synonymous with videogaming itself in the eighties, and is hence a terrific weapon in the videogame wars of the nineties.

There are, however, two problems with this belief. First, Nintendo is going firmly after the 8 to 13 year old market, at least initially. But there is evidence to show that while gaming remains popular among the players who were 8 to 13 in 1991 when the SNES was introduced (and who are now 13 to 18 themselves), it's entirely possible that this same age group today just isn't as interested in videogames as their big brothers were five years ago. Trends come and go, fashions change overnight. Try selling Teenage Mutant Ninja Turtles or Transformers on the street today, and witness the lukewarm response.

More pragmatically, Nintendo is counting on brand loyalty and the Mario name to sell systems. But what does an eight year old remember about Nintendo? The loyalty to the Nintendo brand is among users 15 years of age and up - the people being targeted extensively (and successfully) by the PlayStation and Saturn, and largely ignored by Nintendo.

8 Sony and Sega

With a maximum of 500,000 units arriving in the US before the end of 1997, plus a marketing budget in excess of $100 per hardware unit, demand for the Nintendo 64 is certain to outstrip supply. Nintendo will fuel a fire that it simply doesn't have the resources with which to deal. This will likely drive buyers, particularly parents desperate for Christmas presents, into the waiting arms of Sony and Sega (who will have no product shortages). And once one next generation system is purchased, the likelihood of a second one being purchased drops dramatically, especially if, as in Nintendo's business plan, the parents are doing the shopping.

As they enter the toyshop to buy the console, the Nintendo name will certainly be familiar to mum and dad. But more familiar than that will be the name of the world's number one consumer electronics manufacturer, Sony. And while in most marketing, the focus is always on the PlayStation brand, in-store point of purchase displays (more likely to be seen by gift buyers), the Sony name is always prominently displayed, for just that reason.

When gift buyers walk into a store intending to buy a game system, seeing the trusted Sony name at a lower price point, combined with a volume of available (and cheaper) games, is bound to impress - perhaps even more than Nintendo's name. This is a form of competition with which Nintendo has never had to deal before, even when squaring off against Sega in the 16bit days. The game industry's 900-pound gorilla may well have just run up against a bigger, more scary monster than even itself.

Despite its initial lacklustre performance in the 32bit race, Sega isn't going anywhere. It plans to spend almost as much as Nintendo throughout 1996 on marketing, and it



Paradigm Simulation, pioneers of the software technology behind *PilotWings 64*, is one 'Dream Team' member that has proved its worth. Bruce Caridi, VP of marketing (above)

has something that Nintendo has never had – AM2's library of killer coin-ops. When *Virtua Fighter 3* is converted to the Saturn, even with obvious console-version limitations it is still guaranteed to be a massive hit.

Sega can also be relied upon to produce a more innovative marketing campaign that reaches beyond the lowest common denominator of their, up until now, half-baked Saturn strategy. Combine this with a new *Sonic* title on the Saturn and Mega Drive, and *NiGHTS* on the Saturn, and it's clear that Sega isn't planning on taking Nintendo's threat lightly.

And, of course, at present, Sega has the only Internet strategy among the console manufacturers, which could score major points if the market for the '$500 network PC' really does exist.

9 DD64: Nintendo's 32X?

In the entire history of console gaming there has never been a peripheral that has sold in significant numbers, and the DD64, which will add at least another $100 to the cost of the Nintendo 64, is not likely to be an exception, despite the range of features it will offer users. 'It's not a route I would advise taking,' ruefully warns Sega's **Tom Kalinske**, conscious of 32X's high-profile nose dive onto oblivion.

Indeed, it's possible to argue that no matter how DD64 fares, it's bad news for Nintendo. If it fails to sell in any significant numbers at all, then Nintendo is stuck with cartridges (bad news) and can wave goodbye to any possibility of introducing a competitive online gaming network for Nintendo 64 (bad news). If it sells a reasonable amount of units, it then splits the Nintendo 64 game market down the middle – half the people will want cartridge games, half will want DD64 games. This will lead to confusion, and dilute development resources (bad news). If DD64 sells out and becomes an essential add-on for Nintendo 64 gaming, then the entry level price of Nintendo 64 gaming increases by $100 to $350 (bad news).

Additionally, Nintendo's history of not supporting peripherals (its Famicom disk drive failed due to a lack of software) means that even hard-core gamers will want to think twice before they buy.

10 Nintendo is too tightly tied to Japan

One Nintendo subcontractor quipped to **Edge** that the folks at Nintendo of America are so closely linked to their Japanese HQ they need permission to take a leak. **Edge** assumes this is a slight exaggeration, but the point is understood.



***Zelda 64*, destined for the DD64 optical disc drive, should create almost as much mass hysteria as Mario**

While all three console manufacturers are closely tied to their Japanese parent companies, none are tied more tightly than Nintendo. While Sega may not always know when it is getting information from Japan, it's generally free to do what it wants with the information once it's in its hands. Sony has even greater freedom, especially since so many SCE Japan executives are now occupying offices at SCE America's Foster City headquarters. The end-result is that Nintendo of America simply cannot manoeuvre in the marketplace as fast as Sony or Sega can.

> One Nintendo subcontractor quipped that the folks at Nintendo of America are so closely linked to their Japanese HQ they need permission to take a leak

In conclusion, **Edge** believes the Nintendo 64 will be a huge success, but that success is by no means guaranteed. Without *Super Mario 64*, Nintendo would be in serious trouble. But with *Super Mario 64*, it's hard to see how it can fail. Who wouldn't buy a system to play just one truly incredible game?









Kemco is one Japanese company that has started to reveal its internal development efforts (*Blade and Barrel*, above)

'Dream Team' software has varied in quality so far. At E³, Williams' *Wayne Gretzky's 3D Hockey* looked rather 32bit, while DMA's *Body Harvest* (top left) and the rather dreary-looking *Doom* (above) were nowhere to be seen

Continued next page

An interview with **Howard Lincoln**

Chairman, Nintendo of America



NOA's US chairman Howard Lincoln naturally defies accusations that Nintendo is shooting itself in the foot with its N64 strategy

NOA's chairman has had to defend the Nintendo 64 vision for almost three years. With the machine now sitting in Japanese homes. **Edge** poses some difficult questions...

Edge The same day Nintendo 64 was unveiled in the US, Sony dropped the price of the PlayStation to $199. The next day, Sega did the same. Why do you think they did this?

HL It suggests to me that there is fear in the corporate boardroom at Sony. I think they have heard the hooves coming, and that this is simply a desperate attempt to do something before Nintendo 64 launches. You know, there really isn't that much difference between 32bit and 16bit anyway. So presumably, their natural price point is probably $149. Maybe they should go to that. It seems to me that the timing of Sony's announcement suggests panic and desperation. They didn't have to make that price adjustment because of anything Sega was doing, so the only logical explanation – unless they've simply lost their minds – is that they're fearful of Nintendo 64.

> I don't care if we have as many games as Sony or Sega. What I care about is whether they're any good

Edge What do you mean when you say that there's not much difference between 32bit and 16bit?

HL There isn't any dramatic difference between *Donkey Kong Country* and any of the stuff Sony or Sega is doing on 32bit.

Edge But gamers have had to pay more for it. Do you think this could explain why 32bit isn't as big as 16bit was?

HL I don't think 32bit really happened – the quality of the games is not any different than the 16bit games we are putting out. As a result, Sony's and Sega's sales figures combined – in any month since their launch – do not equal sales of SNES hardware. 32bit is stalled. And Sony and Sega realise there is not that great a market for 32bit once Nintendo 64 and other 64bit platforms come in. So, in desperation, they've done the only thing they could do. That's my view. I'm sure they disagree.

Edge But there's no arguing that the system with the lowest price has a terrific advantage. Sega's Tom Kalinske reckons that price is the single most important factor of all...

HL I don't think it's the single most important factor at all. The single most important factor in driving the videogame market is good software. It's games like *Super Mario 64*.

Edge Are you worried that there won't be enough games for the N64?

HL We are prepared today to concede that Sony and Sega will have more titles than we will have. We're prepared to concede that we're not in the PC entertainment software business in trying to compete with 4,000 titles that are out there. There's going to be a more than adequate range of Nintendo 64 software, it's just that you're not going to have hundreds and hundreds of games.

Edge Why not?

HL We don't believe that everybody in this business is capable of making 64bit games for the Nintendo 64. We feel very strongly about this, and we haven't made any bones about it. The worst mistake we could make would be to rush a lot of games to market just so that we could say, 'We've got as many games as Sony and Sega.' I don't care if we have as many games as Sony and Sega. What I care about is whether the games are any good or not. We're simply not going to get ourselves involved in a situation where we have a lot of mediocre games.

Edge Add ons and peripherals such as the Sega CD and 32X have traditionally failed. What makes you think the DD64 can succeed?

HL It's completely dependent upon software, and you should assume that the reason we're spending a lot of time and money developing the DD64 is that we have a pretty good idea of what we want to put on it by way of software. It's just that we haven't told you.

Edge Is the strategy to simply sell lots of N64s now, with a view to phasing out cartridges and making money from games on the DD64 disk drive at a later date?

HL Not at all. I don't regard the DD64 as an alternative medium to cartridges. I regard the two as compatible, so we can give a range of software mediums for game developers to program on. We're not just doing cartridges until we can get the DD64 out. We see the kind of games you can play on magnetic disk since it's writable – to be a different genre of game. We're not exactly sure what that is yet, but Mr Miyamoto, who also has in his back pocket somebody by the name of Zelda, is going to try to figure that out for us. And I'm confident that he will do so.

We're not going to get out of the cartridge business. Obviously, if it was possible to do *Super Mario 64* on some other software medium, we would choose that. But it is not.

Edge So to make a Nintendo 64 game as good as *Super Mario 64* you need two and a half years, the world's best design team, complete access to the hardware designers, and unlimited financial resources. Won't thirdparty developers be put off by this?

HL Could be. But with developers having seen *Super Mario 64* at E^3 I fully expect to have a lot of phone calls from people wanting to develop on the Nintendo 64. Something tells me we're not going to be boycotted. After we showed the prototype of *SM64*, we didn't have any more people say, 'I can't figure out how to make a game in a 3D environment with these tools,' because somebody just showed them how.

Edge It makes complete business sense for a hardware manufacturer to be his own biggest publisher – so you want Nintendo's own games to be the best. But Nintendo can't supply all gamers' needs, so you have to help others along the way. How do you balance your need to help your developers with your need to stay slightly ahead?

HL There's a lot of sharing going on behind the scenes. Companies like Paradigm are supporting the N64 game developers, and there are several such arrangements in place. We want these people to succeed, we don't want them to make mediocre games.

Super Mario 64









From top: Mario views the first level from its mountain; crawling through flowers to sneak up on a snoozing enemy; green blocks give Mario a winged hat; using it allows him to soar across the landscape



Mario's adventure begins outside Princess Peach's castle. The Nintendo 64's graphical processing muscle generates an incredibly smooth and detailed environment, outperforming existing 32bit formats considerably

If Nintendo aimed to set itself a tough task, choosing to make the first Nintendo 64 title a continuation of the most legendary series of videogames in history must surely rank as the most demanding one imaginable. Mario's lineage, after all, is a concertedly two-dimensional one, and hardly ideal material upon which to base what was destined to be the most intensely scrutinised 3D videogame of all time.

Nintendo establishes its intentions right from the moment you power up the game, when you're greeted with the spoken words: 'It's me - Mario!', in a high-pitched, pseudo-American-Italian accent, followed by a polygonal representation of the portly plumber's head, which can be playfully tweaked and tugged using a glove-like pointer.

At a time when the PC gaming fraternity is getting its thrills from guns, guts and gore from the likes of *Quake*, Nintendo is working at the other end of the spectrum, expounding on the overtly jolly themes that has made it the biggest videogame company in the world.

Any preconceptions about this being a game purely for kids are quickly discarded, however. True, *SM64*'s presentation doesn't sit comfortably alongside the likes of '90s new-breed games such as *Wipeout 2097*, but videogames exist to entertain, whether they come drenched in Designers Republic imagery or gaudy, toytown-like colour schemes; whether their soundtracks feature full-on Chemical Brothers arrangements or disposable plink-plonk lift muzak. And entertainment, more than anything else, is *SM64*'s watchword.

The moment the game hands control of Mario over to the player, an experience of discovery begins. With over 20 actions to experiment with in the opening environment (a grassy area dotted with trees, populated by birds and butterflies, and flanked by a beach), the temptation to simply toy with the controls (consisting of a combination of the analogue stick, the A and B buttons, and the Z 'trigger' button on the joypad's underside) without achieving anything in particular is overwhelming.







The Bom king (left) is the first boss character that Mario encounters. Defeating him is easy – simply grab him from behind and throw him (above left). Koopa challenges Mario to a race (above right)



Using 3D, *SM64*'s designers have invented all manner of innovative enemies, such as these deadly cubes

Swimming underwater is a great gameplay twist (above left). As in *Super Mario World*, finding switches to activate blocks is an essential part of the overall challenge (above right)

Along with simple punches and kicks effected with simple stabs of the attack button, it's possible to pull off sliding attacks, foot sweeps and bottom bounces (reminiscent of those in *Yoshi's Island*). The lure to experiment turns out to be a fortunate one, as familiarity with how Mario behaves and performs is essential – unlike previous Mario games, where skills picked up in one could be easily applied to another, there is little you can bring to *SM64* apart from the willingness to learn.

This fact makes it initially less accessible than any other Mario title. Getting to grips with its analogue control method (jig the stick slightly and Mario tiptoes; push it to its full throw and Mario runs; in between he walks) is not really where any difficulties occur, as Nintendo's new joypad technology performs excellently – it's the way the action is viewed that takes some getting used to. The game camera moves by its own accord almost constantly, with the intention of presenting what's happening on screen to the optimum efficiency.

This means that you rarely get to approach a challenge from a viewpoint that you're accustomed to, and will involve frequent frustration as you attempt to run across a narrow gangplank between two floating islands, or across a thin bridge spanning a rushing subterranean river, for example. It's all a matter of practise, of course, and what starts out as a niggle eventually becomes simply another aspect of the playing experience, as manipulating and fine-tuning the camera view yourself is as user-friendly as could be imagined.

Considering *SM64*'s 64-megabit cartridge format, the scale and variety of its content is astonishing. Consisting of 15 courses – each a sprawling world in itself – there are countless secret areas and bonuses to discover, in the true Mario tradition. Your quest will take you over ice-covered



SM64's realtime intro sequence shows Lakitu seeking out Mario





Once activated, red blocks can be smashed to reveal a power-up which turns Mario into a metallic form. In this invulnerable state it's possible to smash through enemies and use gained weight to sink in water

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Format:	Nintendo 64
Publisher:	Nintendo
Developer:	In-house
Price:	¥9,800 (£60)
Release:	Out now (Japan)

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Exclamation blocks (left) reveal bonuses. Finding a mirror (above), which reflects *SM64*'s cameraman, Lakitu, is a magical moment. The Ghost House (right column) is very atmospheric

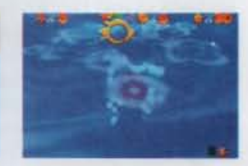
mountain, around sand-ridden pyramid and through murky oceanic depths, encountering old and new foes, and old and new challenges along the way. Each new level surprises and amazes in its design, and each is a thrilling experience in itself.

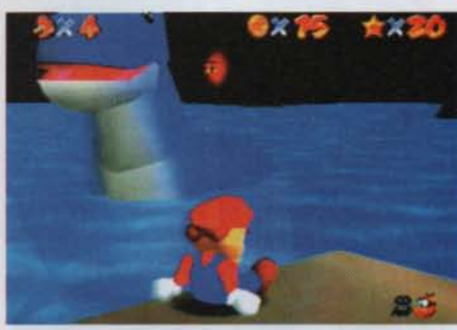
SM64's graphics, for all their cuteness and surreal tendencies, are the most magnificent ever seen on a home system. Shigeru Miyamoto's dream of producing something that is more akin to an interactive cartoon than a videogame has been realised to a remarkable degree: at times it's almost as much fun to sit back and watch someone else play *SM64* as it is to be playing it yourself. Animation is extravagant, textures are impeccably lavish, and even the most seemingly superfluous touches are rendered with the kind of detail that any developer other than Nintendo would not even consider implementing.

While a large part of the game is spent tackling straightforward challenges (negotiating hazardous landscapes, using your myriad abilities to collect hard-to-reach stars, etc), there are many sections to cause scratching of heads. As in previous Nintendo games, though, the gaming environment is generously peppered with signposts, each giving the player little pointers as to the whys and wherefores of this often puzzling artificial world. Early N64 adopters picking up Japanese machines will find such guidance fruitless, of course, but its presence is typical Nintendo, and demonstrates its unmatched understanding of consideration for the player.













***SM64* is packed to bursting with jaw-dropping graphical set pieces such as this sliding-tile section (above). Mystery-packed watery sections (right) are some of the game's high points**

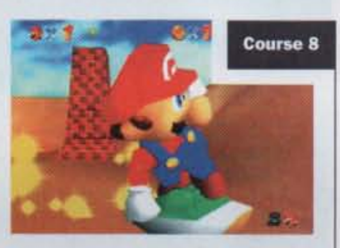






Though levels of ice and snow are predictable in platform games, no-one does it better than Nintendo. From left to right: making a typically tough leap; a giant penguin has lost her offspring; Mario finds the nipper in question; bringing the two together again is a hazardous undertaking



This desert-themed course is packed with hazards, including sinking sand. From left to right: reaching its focal point, an enormous pyramid; inside, hanging from a steel cage-like arrangement; being chased by a rolling enemy; surfing the sand with a shell – another fun element of *SM64*

SM64 puts Nintendo's much-publicised preference of 'silicon over optical' storage to the test, and the results are pleasing. Its flow is seamless – moving from the main game area (the castle) into one of the areas that adjoin it is instantaneous, with no delays for loading or decompression in evidence. PlayStation and Saturn owners will have long since become accustomed to loading waits, but *SM64* may remind them just how console gaming used to (and, Nintendo would no doubt argue, should) be: immediate.

The lack of a CD soundtrack doesn't hamper the game, either. Nintendo's in-house sonics supremo Koji Kondo (who contributed soundtracks to many a legendary SNES game) turns in a typically inspired performance in squeezing memorable audio out of Nintendo's 64bit hardware. While, perhaps predictably, some musical tracks fit the typical cheesy Japanese game music mould, others, such as the sitar-laden burbling score of the first fiery level you encounter, generate at least as much atmosphere as any CD-streamed track. Spot effects are similarly impressive – Mario's more noteworthy actions on-screen are matched by audible accompaniment in the form of excited whoops and hollers, giving his personality even more spark.

The premier Nintendo 64 game ably vindicates the delay imposed upon the machine's release by Shigeru Miyamoto and his team of designers. It's a well-known fact that few videogames delight in the fashion an example from Nintendo can, but no Nintendo game you've ever seen is nearly as delightful as this new 64bit breed.

The world of videogaming has just changed forever. The prospect of what Nintendo can deliver further down the line truly boggles the mind...

Edge rating: **Ten** out of ten







Cannon travel is essential to reach certain sections







Upon first reaching the sunken ship in this level, your first task is coaxing a giant conger eel out of its home (left), then opening the chests inside in the correct order (above). Get it right and the craft will surface (far left)

PilotWings 64



With scenery this beautiful it's hard to concentrate on the missions. Some texture mapping is almost photorealistic in quality (above). Tropical islands (right) are particularly stunning

Format:	Nintendo 64
Publisher:	Nintendo
Developer:	In house/Paradigm
Price:	¥9800 (£60)
Release:	Out now (Japan)

Although media attention will inevitably focus on the brilliance of *Super Mario 64*, it may not provide an accurate indication of how good or indifferent N64 titles will be. After all, *SM64* had to be good – the cute little figure is Nintendo's icon, the company's main asset. Nintendo simply couldn't afford to get that game wrong. Recently, however, sceptics have been claiming that the N64 will rely solely on *SM64*, and that all other games will pale into insignificance. *PilotWings 64*, then, is an important release – it's a sign of what we can expect from titles that don't involve a certain Italian plumber. And, if it's an accurate sign, the future looks extraordinarily bright for Nintendo.

In terms of plot, *PW64* is very similar to its 16bit predecessor. The player must complete dozens of flying tests in a variety of aircraft over a number of different island settings. Each flight involves completing a different set of tasks. These usually include zooming through hoops in the sky, shooting at targets on the ground, even taking photos of buildings, and all have to be followed by a neat landing. When the stage is complete, players get points based on how they've coped with obstacles, how well they landed and how stylishly they performed the whole exercise. If the score is good enough, the player then goes on to the next level and faces a set of more difficult missions and tasks.

Inevitably, the first thing that grabs the attention are *PW64*'s incredible graphics. Each island setting is faultlessly designed, extraordinarily detailed and just beautiful to look at. 'Holiday Island', for instance, where the first three missions take place (one mission for each of the craft), is a



Some of the panoramic vistas are breathtaking, despite scenery occasionally popping up slightly









Missions are varied both in terms of scenery and the time of day at which they take place. Furthermore, all locations are fully interactive, meaning you can land wherever you like

lush green tropical location featuring small, intricately designed buildings, towers and even a fairground. It's a hive of activity: when you fly over the coast, the sea roars and the waves sweep realistically into the shore. There are even speed boats coasting through the water, and hang-gliders circling a mountain peak. Sometimes it's hard to follow the mission objectives because there is so much to explore and so much to find out about each location. All this and 'Holiday Island' is arguably the least impressive location – in fact, it may even slightly disappoint those expecting miracles from the N64.

Such worries are misplaced, though – miracles do happen, and later islands impress with the sheer panoramic scale of their geography. One of the two missions which make up the second hang-glider stage starts on top of a huge mountain. The player glides over the summit for a few seconds and then suddenly the surface drops away and a huge, astonishingly steep gully appears. The point at which the plunge begins and the player looks down at the gorge beneath is simply breathtaking. The incredible scenery is accentuated by the almost photorealistic textures: mountains look like mountains, water looks like water (including spectacular splashes) and even fire looks realistic. There's little scenery pop-up (only the huge islands suffer at all) and no pixelization – it's all so far ahead of anything else it simply defies belief.









An early hand-glider mission involves taking a photo of this chimney, busy pumping noxious gasses into the air

PW64's scenery is full of detail. The Statue of Liberty (top left) is a nice touch, as are the whales (top right) and various boats (above left) that litter the seas. Bridges often play a role in missions (above right)

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Birdman

The birdman section allows the player to explore a beautiful island setting. The huge tower (inset left) and fountains (inset right) are impressive, as are the hang-gliders (main)

Gyrocopter






The gyrocopter has the most familiar feel of the craft on offer. Some missions involve manoeuvring through circles (above right)



Each mission is accompanied by a map screen so that a good flight route can be planned. The player can zoom in and pan around to get a comprehensive view of the island

Even when a mission is flown above huge cityscapes (usually disastrous due to the amount of detail needed to make them look believable) *PW64* impresses above and beyond the call of duty. Planes zoom overhead, traffic noises emanate from the streets below, and skyscrapers, emitting realistic lights, loom dangerously in your flight path. There are areas where the frame rate can chug slightly (usually when you fly through an area of particularly intense graphical detail) but this is rare and doesn't detract from the action.

Visual quality is an extraneous detail, though. What really matters is gameplay, and, like the graphics, it is something that may not immediately impress. Yes, the early levels are ridiculously easy, but they are designed to allow the player some practice with each of the first three vehicles. Once you pass the three missions that make up the opening stage, things get a lot more difficult, complicated slightly by some Japanese text.

The beauty of the game, however, is that, although each mission has essentially the same remit - go through the hoops, land well, etc - each represents a completely different play on the theme. The variety is partly due to the fact that each of the craft has its own peculiarities which need to be mastered individually. To begin with you can choose between a hang-glider, rocket pack and gyrocopter, and each flies in a unique way. The hang-glider, subject to thermals, is the trickiest to control with a tendency to dive and swoop when the player least wants it to. The gryocopter does at least have an engine, so keeping it airborne is a cinch. However, the craft's turning circle is wide, making it difficult to line up with hoops if they're perpendicular to each other. The 'copter provides the most traditional flight sim experience - it needs to be treated like a plane in the air, and has to be landed on a runway.

Easiest to get the hang of is the jet-pack, which has two rocket jets either side of the pilot that can be angled with the analogue pad and then fired with the A button. This craft is not subject to air



Difficult weather conditions can affect each craft's performance. Prepare for snow, high winds, and ominous storm clouds (above)






The selection screens allow you to choose a normal mission (top left) or, if you have performed well in earlier missions, one of the bonus tasks, featuring new modes (top right). Afterwards, a character can be chosen to undertake the mission. All of them have a slightly different version of each craft







The right shoulder button brings up alternative views: top-down for the jet-pack (above left), internal for the gyrocopter (above centre) and close up for the hang-glider (right)

patterns like the hang-glider and it can manoeuvre quickly, unlike the gyrocopter. Unfortunately *PW64*'s designers have realised this and the jet-pack missions are therefore much more demanding - one involves flying through a city crowded with skyscrapers and trying to get through hoops hidden in the most inaccessible cubby holes.

Adding to gameplay diversity is the fact that, along with the individual traits of the six selectable pilots, each of the craft has its own special ability: all accessed with the trigger on the N64 controller. The hang-glider has a mounted camera, so many of its missions involve taking pictures of an object on the landscape. One of the earliest tasks is to take a photo of an oil refinery pumping out pollution through a tall chimney - the player has to swoop in, photograph the offending chimney and land safely on a pad over the hill. This is great fun, especially considering the espionage theme - zooming over the industrial complex is rather like being in a James Bond film (only with cheesy music).

The gyrocopter's missile launcher is the most fun. Many missions involve shooting at circular targets on the ground, and it's an amazing thrill to snake through a valley at 168 kph, hone in on a target and blast it to pieces before rising out and into the night sky. In comparison, the jet-pack is rather disappointing - its special function is a retro-thrust which stops the contraption dead still. This is vital at times, however, especially for landing in windy conditions.

Another major addition to gameplay is the diversity which Miyamoto and his team have crammed into the uncomplicated game structure. In one jet-pack level the green circular hoops you need to fly through are substituted for huge blue balls. When one is hit it bursts revealing six smaller orange balls which all have to be burst, despite the fact that they're bouncing away over the landscape. Another mission requires the player to get a giant ball into an enormous translucent drum. Weird.

In a sense *PW64* is a marvellous combination of traditional flight simulation and surreal Nintendo gameplay. There is no doubt that the sensation of flight, the sense of momentum and the force of gravity are all totally convincing. There is also no doubt that each of the craft you fly in the game handles in a unique fashion. The accuracy of the 3D flight model combined with the luscious scenery makes *PW64* a supreme flying experience. On top of that, however, are the curious missions, the Mario face on Mount Rushmore, the hidden sections, etc. It's a weird mix of total realism and self-conscious video game elements, but the two don't grate - the player simply adapts to each strange mission without a thought for how a singular flying experience could possibly involve trying to pop huge bouncing balls.

PW64 is classic Nintendo: a simple, addictive game idea embellished with extraordinary detail and graphical finesse. Silicon Graphics' promises of one day delivering a games console with the power of an Onyx are legendary. Well, this game looks like a lower resolution Onyx and it isn't science fiction, it's here, now. This is easily the most impressive 3D ever seen in a video game. And to think it's all there to envelop such a charmingly diverse and enjoyable game. It may be that there is no other videogame developer in the world that could visualise and execute a game like this. Sony. Sega. Start worrying now.

Edge rating: **nine** out of ten





Understanding thermals is important for success in the hand-glider missions. Circling within one increases the craft's speed and altitude







In the gyrocopter, you can target objects and fire missiles. The giant rock man (centre) is tough to hit

Motor Toon GP2







***Motor Toon GP2* includes six bonus tracks and a 3D tank game, similar to Atari's VCS title, *Combat* (top)**

The original *Motor Toon GP* was one of the first examples of 32bit gaming that seemed to offer the earth upon initial inspection, yet failed to show many worthwhile gameplay or longevity credentials once its surface gloss was scratched away.

SCE-funded team POLY'S has gone some way towards addressing the shortcomings of the original game in this sequel. Gameplay was first on the agenda, and, while the driving feel remains more or less the same as that of the first game (meaning it takes a fair while to get used to the cars' lack of sliding ability and their subsequent propensity to corner poorly), the addition of power-ups is a major new twist. Blatantly stolen from Nintendo classic SNES title *Super Mario Kart*, *MTGP2*'s system involves picking up tokens that are dotted at intervals around each track. These can be stockpiled and used to trigger a 'carrousel', which can be stopped at random on one of a selection of power-ups, from nitros to oil slicks to rockets. As in *Mario Kart*, considered use of these can change the face of a race, and they add to the competitiveness of the experience immeasurably (especially since your opponents can use them, too).

A better gameplay tweak, however, is the allowance for twoplayer linked play (which replaces the dismal split-screen twoplayer mode of the original), and the inclusion of a network disc in the package specifically for this purpose. Its presence means that a willing second player does not need to purchase their own copy - a touch that other developers would do well to adopt if the PlayStation's link-up capability is to be maximised.





The scenery in *Motor Toon* is truly spectacular and verges on the fantastic. The dragon in the haunted house is particularly impressive (top)





By zooming the camera out, it is easier to see tricky bends and anticipate the required action (above). Watch out for the sheep (top right)

Format:	PlayStation
Publisher:	SCE
Developer:	POLY's
Price:	¥5,800 (£40)
Release:	Out now (Japan)

Delightfully, there is a wealth of extra options to discover in *MTGP2*. Selecting 'Goodies' from the title screen brings up six which are only revealed as you conquer the game. Once available you'll be able to select new characters, new tracks (remixed, reversed versions of the standard tracks), and even entire subgames.

Such willingness to give the consumer value is admirable, but **Edge** can't help but feel the game's core driving experience deserved at least as much effort applied to it to make it a more playable game. If POLY'S had stolen a a little bit more from *Mario Kart*, there's little doubt the end result would have been considerably more satisfying.

Edge rating: **Seven** out of ten

Choro Q







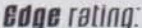
Different weather conditions affect the hues in which the game is displayed

Choro Q's levels are beautifully realised, with little polygon build up as the roads stretch out. The game borrows heavily from the *Sega Rally* school of motoring, which in this case irritates rather than excites

Mystifyingly bearing the same name as a 1984 MSX platform game with a VW Beetle in it (from the same company), *Choro Q* is the first attempt at a PlayStation rally game to challenge the mighty *Sega Rally*. It's not just the theme that's been pinched from the Sega classic, though. One of the major gameplay differences between *Sega Rally* and, say, *Ridge Racer* (and one which no-one seems to have picked up on) is the restrictively unforgiving play structure. In *Ridge Racer*, if you crash, skid or spin, the computer opponents are slowed down to compensate for your error, giving you a chance to retrieve the situation. (Similarly, if you get ahead, they drive at the peak of their capabilities in order to stay as close to your tail as possible). In *Sega Rally*, however, your only chance to win the race is to drive more or less perfectly all the way through - one major shunt and, while you'll still make the checkpoint, you simply won't be given the opportunity to finish in first place as the computer cars stay frustratingly out of reach.

Choro Q has taken this creed and stretched it to breaking point. In fact, on the simplest of the six tracks, starting at the back of the grid in the fastest car and driving flawlessly at top speed all through the three laps of the race still won't get you to the front - if you're lucky, you'll scrape second. Selecting the same race again will see you start in the position you finished in previously, but even starting from third you'll need to drive absolutely perfectly, and even then you'll only pass the leader about three inches from the finish line.

Driving perfectly isn't as easy as it sounds, either. Steering is extremely heavy in *Choro Q*, and the line between not-turning-at-all and skidding into a wild 720-degree spin is a wafer-thin one. All taken together, these factors make *Choro Q* almost unplayably hard, which is a shame because it's so nearly excellent - the courses are beautifully designed and gorgeously realised, and once you eventually get the hang of the handling (and manage to upgrade your car sufficiently) you can make a pretty fair stab at about half of the courses. Just don't scrape any of the walls while you're doing it.



Edge rating: Six out of ten



Rather than sticking to one particularly track type, *Choro Q* offers offroad and traditional racing



Some corners and cliff edges are spectacularly realistic (right)

Format:	PlayStation
Publisher:	Takara
Developer:	In-house
Price:	¥5,800 (£40)
Release:	Out now (Japan)

Actua Golf



The number of options available before each shot is immense (above), but most players will find simply whacking the ball is sufficient. Although the rendered graphics add much, the gangly motion-captured players leave a lot to be desired





After each shot a replay can be viewed, with a vast array of different cameras to choose from

Format:	PlayStation
Publisher:	Gremlin Interactive
Developer:	In-house
Price:	£44.99
Release:	July

Most golfers judge a course by the quality of its greens. Even the longest-hitting pros are humbled by poor putting. And that, indeed, is the rub of *Actua Golf*, which takes on many of the features from Electronic Arts' *PGA Tour* series, but drops a shot or two short.

Any keen golf fan will be overjoyed to discover commentary by Peter Alliss, the laid-back wag who provides the voice-over for the BBC. You can't help feeling good when your straight hitting is described as 'great technique' and 'the sign of a great golfer'. 'Would you believe it,' exclaims Alliss to another scorching drive, 'that was a classic shot.' It's a shame, though, that none of Alliss' infamous quips accompany the straight-laced golf criticism.

Driving off the tee is certainly the highlight of the game. The easy controls, borrowing heavily from the rules laid down by *PGA*, enable club selection, shot direction, and as a novel addition for non-tee shots, the ability to play different shots such as chip, punch, or normal.

As is so often the case it is around the greens that your skill and experience come to the fore, and unfortunately this is where *Actua* struggles. Although a grid indicates the roll of the green, and a direction arrow shows the weight and aim of your shot, the putting system just doesn't come close to *PGA*'s. Quite often you'll find the ball speeding past the cup, when all the arrows and sliders indicated it was a dead cert.

Apart from this fundamental irritation, *Actua* excels on both long shots and presentation. The fully rendered holes look superb, even if the colour scheme lacks the rich 'sunny' look of *PGA*. What impresses most, however, is the stunning use of panning cameras to follow the motion of the ball. After each shot you can watch the course gracefully glide by as the ball drifts toward its destination. It's a beautiful touch, and one which adds much to *Actua*'s overall appeal. Replays enable the same shot to be viewed from differing camera angles, either singularly or through numerous windows.

The game can be played at professional or amateur levels, with wind conditions altering the ease of each round. Duffers can take a free mulligan when they make a dreadful error, and near the hole a gimmie speeds up putting. But there are quirks. Most shots have two bites of commentary, but the initial praise in flight doesn't always match the summary as the ball lands. In fact after a while you get a bit miffed by the repetitive nature of some phrases, notably whenever Alliss purrs, 'That's been hooked awaaaay, hooked awaaaay.'

There's plenty of life in *Actua Golf* – the holes are fantastic, though not famous, and you can play most types of competition, scoring by strokeplay or matchplay and with handicaps. But the lack of subtle controls that made *PGA* so comprehensive makes *Actua Golf* a virtual experience, not actual.





Following the ball's in-flight motion is a perfect demonstration of Gremlin's excellent 3D engine

Edge rating: Seven out of ten



Focusing on the dynamic and far-reaching world of multimedia, Edge examines some of its many and varied components

nuMedia

In nuMedia this month, Bill Gates sets out his plans for world domination, anime babe Saki Asamiya attacks baddies with a yo-yo, and the mysteries of alien abduction, reincarnation and ghostly apparitions are explored in *The Unexplained*. **Edge** also takes in a diverse selection of hip gadgets from the almost essential Game Boy Pocket to the almost obscene Zoe toilet seat...

in **association** with



books

The Road Ahead

- Bill Gates
- £17.50
- Viking
- ISBN 0-670-85913-3

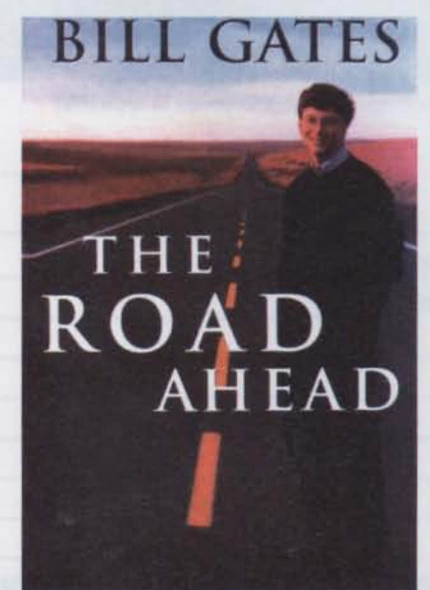
In 1975 **Bill Gates** had a vision. He co-founded Microsoft to realise that vision. In *The Road Ahead* we are treated to a look forward to our technology-influenced future, as seen by Gates himself.

His book begins by recounting the history of the computer industry, and Microsoft's place in it. Here at last – from one of the key players – you can read how this industry came into being. We are then taken on a journey, with Gates as host, looking at a number of threads – most notably the developing Internet – that will culminate in the information society that he envisions.

Gates is an optimist of the highest order, perhaps only overshadowed by **Nicholas Negroponte** of MIT's Media Lab, in his unwavering view that our future will be shaped by technology, and that technology will bring nothing but good. Gates' views of a technological wonderland that he feels we are all moving towards are very persuasive.

The Road Ahead could have been a shameless plug for Microsoft and its products, but it has to be admitted that much of the PC dominated world that we inhabit today, has been fashioned by that company. There are generous references to some of the programs that Microsoft has produced over the last few years, but in most cases these are industry standards, so some praise can be forgiven.

If you are interested in reading about our future from a man who is in a position to shape that future, you will find *The Road Ahead* an enthralling read.



Takedown

- Tsutomu Shimomura with John Markoff
- £9.99
- Secker & Warburg
- ISBN 0-436-20287-5

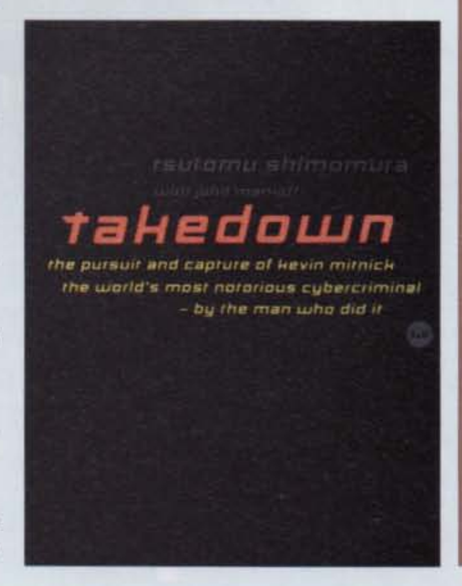
Takedown recounts the pursuit and capture of cybercriminal, **Kevin Mitnick**. We are given a blow-by-blow account of the events leading to his arrest, after **Tsutomu Shimomura** – America's leading computer security expert – had his computers hacked by Mitnick himself.

If you can ignore the ego worship that is Shimomura's writing style, this is an enjoyable read. From a slow start it picks up to an exciting finale, but in between we are subjected to a barrage of technical information which is well-explained without detracting from the plot.

There have been a few books of this type over the years: beginning with **Clifford Stoll**'s *Cuckoo's Egg*. However, where Stoll enhanced the story with references to his personal life, Shimomura's attempt fails dismally.

In *Takedown* we see how the authorities, slow to comprehend the events that were unfolding right before their very eyes, almost missed a chance to finally capture Mitnick for his latest bout of hacking. Shimomura and his able assistant had to fight time, bureaucracy and Mitnick's technical prowess at every turn.

Anyone with an interest in hacking or computer security would find *Takedown* a satisfying read. However, Shimomura's quarry exists only as a shadowy figure at the end of a cellular phone line. More background information on Mitnick himself would have made this more of a rivetting read.



Film

Sukeban Deka (part 1)

- A.D. Vision (60 mins)
- Created by Shinji Wada
- £12.99 (Cert 18)

Girls touting weapons and beating up people is a familiar anime theme and employed with excellent bravado here. Part one of *Sukeban Deka*, concerns Saki Asamiya, a convict and skilled fighter who is freed from prison to bring down a crime ring operating within an exclusive high school. Sounds dodgy, but the shady Fed chief who frees her feels that, because she's an innocent looking girl, she will be able to suss out the criminal activities less conspicuously than the police.

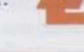
The derivative plot is made more involving by a couple of interesting



touches. The baddies themselves are actually three rich school girls who run a kind of Mafia extortion racket at the school - certainly making a change from stereotypical huge, ugly blokes.

The incredibly stylised artwork is similarly intriguing. Most fights and dramatic moments are intercut with still drawings - used in an expressionistic way to intensify the action. It's a compelling method but the garish colouring and strange sound effects that accompany such moments may amuse rather than heighten the action.

While the story may not be deep, the plot rattles along, aided by some interesting characters. Strangely, though, all the women look 30, yet they're supposed to be at school. In Gunsmith Cats however, the women, who own a gunshop, look 12. Now what does that say about Japanese society?



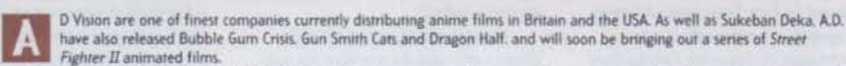
competition

A.D.V. FILMS

Win Japanese goodies

A.D Vision are one of finest companies currently distributing anime films in Britain and the USA. As well as Sukeban Deka, A.D. have also released Bubble Gum Crisis, Gun Smith Cats and Dragon Half, and will soon be bringing out a series of *Street Fighter II* animated films.

In association with A.D. Vision UK, **Edge** has five 'Bring Japan to your living room' kits to give away. Each kit consists of a copy of the Sukeban Deka video, a Japanese techno CD, some Japanese rice crackers and four bottles of Japanese beer. To stand a chance of winning, just answer the following question correctly:



Q What's the name of the huge mutant dinosaur who starred in many Japanese films of the sixties?

This competition is not open to under-18s. On your entry please state your age, and sign and date it. Send the answer on a postcard or envelope to '**Japan compo', Edge, 30 Monmouth Street, Bath, Avon BA1 2BW.** Competition closes August 2, 1996



CD-ROM

Book of Shadows

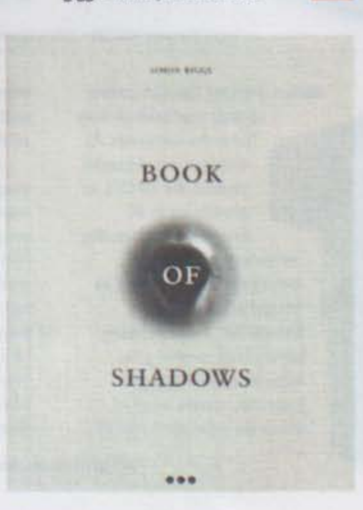
- Ellipsis
- Macintosh
- Out now, £15.00

William Latham may be getting all the press at the moment, but he's not the only artist currently using computers as a medium for his work.

Simon Biggs, another internationally renowned artist, has produced the interactive art CD-ROM, *Book of Shadows*, as a kind of home version of his 'interactive' gallery exhibitions.

Described by the artist's publishers as an exploration of metaphysics and identity, *Book of Shadows* (which is accompanied by a book that explores the themes more fully) is actually a series of weird multimedia pictures. To add interactivity, each picture alters depending on where the cursor is on the screen. 'Shadows', for example, shows a screen full of naked people (photographed in stop frame animation, perhaps?) who shuffle away from wherever you put the cursor. 'Soft Room, Stage Left', on the other hand, displays four disembodied heads which can be made to pull grotesque faces by placing the cursor over them. Both are absolutely (perhaps unintentionally) hilarious.

Biggs clearly understands that for computer art to become a legitimate genre it will have to involve the viewer. Whether he can accomplish that without making the viewer giggle inanely is debatable.



Decadence: Ten years of Nettwerk

- Nettwerk. Contact Gary Levermore on 0171 495 3959
- PC
- Autumn, £TBA

Canadian Indie label Nettwerk may not be a household name, but in alternative music circles, the likes of Skinny Puppy, MC 900ft Jesus and Consolidated - all signed to the company - are legendary.

To celebrate the label's tenth birthday, Nettwerk has released a five CD box set featuring more than fifty songs culled from the company's archives. Some of these are rather dated, especially the mid-eighties Electropop experiments by groups such as Moev and Severed Heads. However, classics like Consolidated's filthy indie club fave, 'You Suck', more than make up for some of these earlier misdemeanours.



Accompanying the audio tracks on each disc is a multimedia section which can be read on the PC or Mac. Here you'll find lots of information about Nettwerk artists including discographies, biographies and video clips - it's standard music CD-ROM fare, but, because it's accompanied by so many audio tracks, this multimedia element serves as an interesting addition, rather than a limited and potentially disappointing complete product. Having said that, the PC/Mac stuff is well presented, and carefully put together. Nettwerk have sensibly eschewed the use of a novelty interface (*Junglism*'s hopeless Jungle City approach being a depressing example), and gone for a straightforward and accessible layout.

To complete an already impressive product, the CDs are beautifully packaged in a spiral booklet featuring some of Nettwerk's distinctive cover art work. So, even if you don't like the music, you can sit and admire the packaging.

Continued next page

Continued

Zion Train: Homegrown Fantasy

- China Records
- PC/Macintosh
- Out now

The title, cover artwork and, indeed, interface, leave one in no doubt as to the nature of this CD-ROM, which has been out for nearly a year now and was created to accompany Zion Train's previous album. It's a paean to the band's beloved weed, and none the worse for that. After all, one should never dream of listening to anything produced by Zion Train without having first ignited a Camberwell carrot.

Although *Homegrown Fantasy* does contain the obligatory pop video, it is, mercifully, a million times as inventive as the average music CD-ROM.

Load it up and you are confronted by a rainbow-coloured marijuana leaf. Clicking on different parts of this will take you to different areas of the CD-ROM. And these areas really *are* different. There's a discourse on the nature of dub and an exercise in which you can build your own dub track, without having to possess an iota of musical ability. There are reams and reams of art-terrorism by **Jamie Reid**, the man who put a safety pin through the Queen's nose in 1977. There's a constant barrage of fascinating facts and agit-prop, gleaned from Zion Train's wider existence as a socially concerned collective. And there are trainspotter-friendly label discographies and biographies.

Homegrown Fantasy is an odd, oblique and vaguely arty window onto Zion Train's interesting and worrying world.

The Unexplained

- Flagtower
- PC
- Out now

Developers Flagtower are riding the crest of a multimedia wave at the moment, buoyed by some gushing critical acclaim for their other recent CD-ROM productions. And if they can turn a double-disc history of medicine into a success story, this unashamedly commercial jaunt into the ever-popular world of ghosts, UFOs and psychic powers should earn them a more-than-tidy profit.

There are no prizes for guessing the money-spinning inspiration, of course – and the 'X' of *The Unexplained* is highlighted wherever possible just in case you happen to be one of those sceptics who thinks that, surely, the world's had quite enough X-Files to be going on with.



But it's all put together with an undeniable flair, from the varied abundance of visual material to the elegantly functional interface. There's plenty of spookiness on offer, too: over 500 pages of text, images and narration cover all things Fortean, from alien abductions to vampires.

It's all complete tosh, of course, with credibility levels diving sub-zero thanks to a belief-beggaring American voice-over, but the disc's probably better value than a couple of books on the subject. If a copy appears on your desk, don't go out of your way to chuck it in the bin.

gadgets and gear

Apple Message Pad 130

For those who are fed up with their clichéd mobile phones and Psion electronic notebooks that have been infiltrating yuppie-dom since the early eighties, Apple's MessagePad 130, incorporating its Newton hand recognition technology, is the perfect device for executives in need of some status.

Clocking in at a cool £525 the backlit message pad has three stages of existence. Initially it is a wonderful toy, which impresses simply by its ability to recognise your handwriting (and forget what the popular press would tell you – Newton worked fine for **Edge**).



Once this child-like fascination is over, Newton becomes an electronic personal organiser, able to store names, addresses, notes in meetings, whatever you like. Aiming for the business market, it is possible to 'beam' information from one Newton to another, fax information straight from the Message Pad, print details from the handheld, and even connect it to a Macintosh or PC to store data or retrieve it from Newton-compatible software packages.

After a few days of 'proper' use, it soon becomes apparent that the MessagePad is, in fact, an incredibly expensive form of pen and paper. The fascination with the hand-recognition technology soon wanes (especially when the odd word is mistranslated, causing delays and irritation as you correct your mistake) and the device is slightly too big for the average palm. At a price of over £500 **Edge** will be hoping for a voice recognition version to emerge. Now that would be cool.

Apple Message Pad 130 • £525 • Contact Apple customer helpline, tel 01753 615996

JVC GR-DV1 personal video

Weighing in at a paltry 520g (including battery and tape) and similar in size to a 35mm camera, JVC's new digital camcorder is the most advanced video camera available on the home market, and also the saving grace for camcorder addicts suffering from stiff arms.

Launched in Japan last Christmas and released in Europe in June, the camera makes use of the new digital video format, and the ultra compact Mini DV cassette to allow for unprecedented picture quality while still being small enough to fit in your pocket. The camera also employs what JVC calls joint level interface protocol, which allows the camera to be hooked up to a PC for use in multimedia applications. With this system, the user can also control camera operation directly from the computer. All this high-tech wizardry enables the GR-DV1 to provide up to 60 minutes of high quality recording and playback before the batteries need to be recharged (average Camcorder's have a similar battery life), enabling the video to act like 'a digital notebook, always ready to record daily scenes or special events', or as an 'invaluable tool for audio-applications in the business environment'.



Other features include a digital image stabiliser (handy for those recordings of in-ride roller coaster experiences), a colour view finder, two PCM digital audio stereo recording modes (48KHz or 32KHz), and various special effects. And of course there's the sleek aluminium finish, which makes the camera look rather like something Q might hand to James Bond before saying, 'for God's sake, 007, be careful with it!'

GR-DV1 personal video • £1,799 • Contact JVC on 0181 450 3282

'Zoe' toilet freshness system

Zoe, believe it or not, is a toilet seat which comes equipped with a joypad and a water-spraying arm attachment. Once you've finished relieving yourself, you simply use the joypad to direct the arm out from beneath the rim so that it can squirt water upwards – creating a kind of all-in-one interactive toilet/bidet.

Andrew Charlesworth, editor of Computer Retail News, who spotted an ad for the toilet while in LA, says of the Zoe: 'it's being marketed as a complete toilet freshness system, but by the looks of it, the device also provides a colonic irrigation.'

This surreal contraption actually originated in Japan (although this version was created by Californian company, Toto Kiti) and, rumour has it, **Peter Molyneux** imported a similar model from there a few years ago. *Theme Toilet* could be just around the corner.

Game Boy Pocket

As reported in last month's **Edge**, Nintendo has revealed a new version of its multi-million selling Game Boy. The new handheld console, the Game Boy Pocket, is 30% smaller, half the weight of the original and lasts ten hours off two AAA batteries.

Apart from the new, crisper black and white display (which is the same size as the current Game Boy screen but can now be easily viewed from different angles), the most noticeable thing about the machine is its sleek matt silver finish and grey buttons. To accentuate this stylish look, Nintendo are also releasing the Game Boy Pocket in a transparent jewel case. More a way of life than a handheld console.



Silver Game Boy • $59.95 • UK release Autumn, £TBA

music

Ocean of Sound 2
Various

Virgin

Ocean of Sound was a strange collection of instrumental tunes, created by various artists and brought together under the general heading, 'ambient'.

This time **David Toop**, who complied OoS, has turned his attention to vocal tracks and put together another ambient-ish double CD of great diversity.

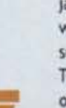
This collection ranges from the hauntingly beautiful to the almost unlistenable (Nico's pseudo-folk mess 'Lawns of dreams'), without ever becoming boring or predictable. Even the more challenging tracks fit in, so the whole thing works well as a coherent, if rather pretentious, whole.

Cream Live Two
Various

Deconstruction

Shedding its image as an overhyped cheesy superclub, Liverpool's Cream is emerging as a meeting point for DJs from all strains of dance music. This triple CD set kicks off with melody maestro **Paul Oakenfold** mixing his usual blend of Europop and thumping Goa trance with a welcome sprinkling of mellow jungle cuts. CD2 sees Way Out West's **Nick Warren** hammering out a quality hard house set (incorporating WOW's brilliant 'Domination'), while **James Lavelle** wraps it all up with an exceptionally diverse journey through hip hop, jungle and, well, everything. A perfect tour of the UK's underground dance scene.





Flux Trax 2
Various

Exp

Less obviously concerned with the chart-friendly classics than last year's *Flux* collection, the second in the series nevertheless packs its two CDs with electronica of the highest calibre. Stretching from **Juan Atkin**'s work as Model 500 in '89 right through to 'Circus Bells', *Flux Trax 2* is a truly eclectic mix.

Dancefloor sensibilities are covered by **Jaydee**'s jazzed-out 'Plastic Dreams', while the pace is pleasantly derailed by seminal cuts such from Disco Evangelists and Sabres Of Paradise. That the other tracks here match the emotion of 'Kinetic', the incredible opening track, says much about this faultless line-up.

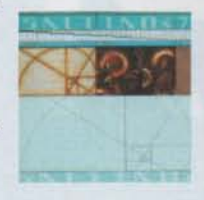


st7
Salt Tank

Internal

Apart from notables, Leftfield and Underworld, few dance bands have cut themselves enough slack from the club scene to manage to create credible self-sustaining albums. Salt Tank's debut album is a superb effort, though, an immaculately orchestrated slice of electronica fusing the melodic, trancier end of the techno scene with organic, often ethic-tinged ambience.

Whether its the ravishing guitar acoustics of Eugina (a DJ favourite that recently charted), the C64-like melodies of Taj, or the noisy breakbeats of Gaza Strip, Salt Tank are further proof that the UK is still firmly on the tip of the dance music revolution. Brilliant.

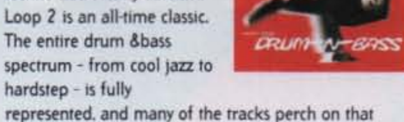


In order to Dance 6
Drum 'n' Bass

R&S

Life without R&S Records would be intolerable. Belgium's premier techno label has discovered drum and bass in a *big* way and this double-CD is their first shot at a D&B compilation. And what a way to kick off: **Alex Reece**'s remix of Detroit techno bod **Kenny Larkin**'s Loop 2 is an all-time classic. The entire drum &bass spectrum – from cool jazz to hardstep – is fully represented, and many of the tracks perch on that cusp where techno meets drum and bass.

It's all top quality stuff in this essential drum 'n' bass compilation. And you can even download an accompanying screensaver from R&S's Web site.



Grow Together
Zion Train

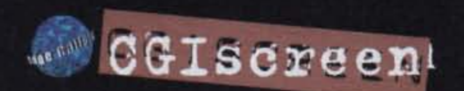
China

You've got to admire Zion Train. Who else would have the sheer audacity to weld together dub, trance and even a seasoning of punk? *Grow Together* is, by miles, the best album put out by the wibbly wobbly dubmeisters, and its more conventional, anthemic dub-trance tracks could even bring some chart success.

Some of the trancier tracks are a tad apt to lapse into cheesiness, but high points abound. 'Rise' and 'Stand up and Fight' are deliciously tuneful and summery, and if 'Dutch Flowers', which dissolves into an orgy of birdsong doesn't get you leaping around, weeping with joy and waving your hands in the air, then you're a miserable sod.







Gallery

Edge explores the world of computer-generated imagery, showcasing the work of the leading graphic artists behind the world's most aesthetic videogames

While hardly pioneering in terms of CGI, the forthcoming Saturn adventure *Dark Saviour*, from affiliated Sega developer Climax, includes cut-scenes designed by **Masayuki Hasegawa**, a freelance CG designer responsible for the stunning CGI intro scene in Sega's own *Clockwork Knight*. Created solely in *SoftImage*, CGI appears throughout the game to link the smooth but chunky realtime 3D environments. Relying on typically chisel-jawed heroes and some swooping cinematic camera angles, *Dark Saviour*'s CG design is geared towards the traditional Japanese fantasy RPG market and, as such, is in direct contrast to Hasegawa's outlandish toytown environments of his previous Saturn project.

Rendered on SGI in *Softimage* by **Masayuki Hasegawa**









Rather than simply prerendering visuals for FMV cut-scenes, EA's **Adam Medhurst** and his team have added an interactive element to the CGI of *The Darkening* (see page 32). Painstakingly rendered over several months, many of the images shown here feature areas upon which the player can click to further explore the game's hidden subplots.

More astonishing, however, is that all these images were created without the help of *SoftImage* and SGI equipment. 'We used P120 or P133 PCs, with a minimum of 64Mb RAM,' says Medhurst. 'It's a compliment to the team that people think these images were rendered in *SoftImage* – maybe next time.'

All images rendered on PCs using *3D Studio 4* by EA Manchester's **Adam Medhurst** with assistance from an art team stretching from a core of eight members to 15 when required

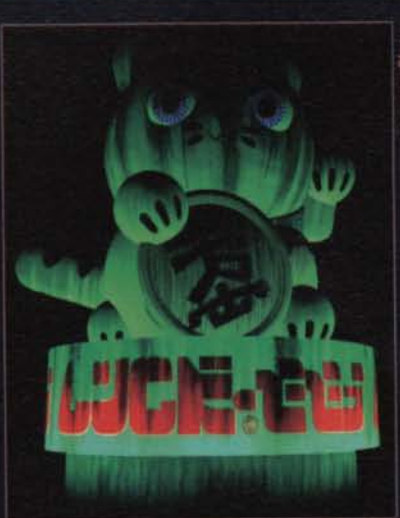
Solar Crusade is Infogrames' last prerendered excursion for Philips' doomed CD-i platform. Like its precursor, *Chaos Control* (E2), this is essentially a beautifully realised piece of computer animation with a flimsy shoot 'em up engine slapped over the top. Except that, this time, the graphical expertise of the French modellers and animators involved has resulted in CGI that far surpasses their previous work. Particle systems in *SoftImage* are used to render gloriously realistic sandstorms that swirl across a Martian planet surface. Incredible lighting effects create dazzlingly hazy sunsets, and Geospecific data has been implemented to accurately render Peru's ancient civilisation of Machu Pichu.

Modelled, animated and rendered in *Softimage* by **Jeremy Mamo**, **Jean Marc Ariu**, **Jean Michel Perron** and **François Mourre** of Infogrames. Original concept and character design by **Frank Drevon**

© Infogrames 1996







© Psygnosis 1996

Edge profiled **Jim Bowers**, the lead CG artist behind *Wipeout 2097*, in issue 33, and here's a glimpse of the CGI to be used in the US version (where it will be renamed *Wipeout XL*). Again, modelled and rendered in *SoftImage*, the image has also benefited from a 2D paint program. The game's Luck-ee mascot (above) is the work of **Nicky Carus-Westcott** who has drawn heavily on DR styling and Japanese 'kawai' (cute) culture.

Created on SGI using *Softimage* by Psygnosis' **Jim Bowers** and **Nicky Carus-Westcott**



SoftImage

Probably the best rendering package in the world

Away from the headline-grabbing stunts and over-revving PR machines at E³, the Montreal-based and Microsoft owned graphics company, SoftImage, quietly announced the latest version of its *SoftImage 3D* software. That it will be successful is almost beyond doubt, as since the company was founded almost ten years ago by Canadian **Daniel Langlois** it has become one of the leading-edge graphics software companies in the world. It was the inverse kinematics features of *SoftImage 3D* that drove Spielberg's dinosaurs in Jurassic Park and the same software that created Psygnosis' *Wipeout* and the forthcoming *Tenka*.

Several features have been included in the new release specifically targeted at game developers. Geometry, material, texture and animation data can now be imported or exported directly to the Saturn or PlayStation as well as to *Direct3D* and VRML. A new texture editor allows users to paint on a 2D texture and immediately apply it to 3D models, and improved polygon and colour reduction increases the run-time performance of models without sacrificing image quality. Also, various tools that have in the past been developed with Sega have been generalised and are now available as part of the basic package.

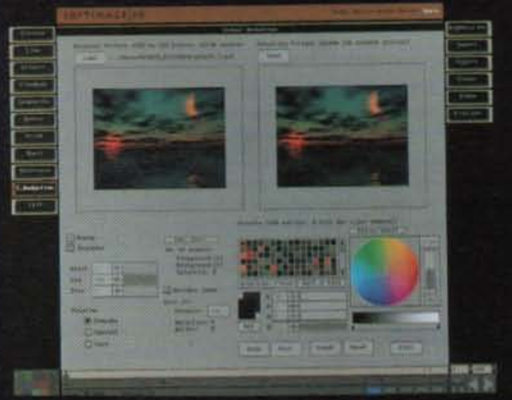
Probably its most intriguing feature, though, is the inclusion of the Software Development Kit, a C-based, cross-platform programming environment that will allow users to customise the architecture to their own needs. There are roughly 150 developers currently working on plug-ins for the SDK, with a solid 20 targeting Siggraph for launch.

'It's largely targeted not only at thirdparty developers but also large interactive multimedia companies who want to be able to design their own tools,' comments **Dan Kraus** from the 3.5 SDK development team. 'One thing that's very hard for us is keeping up with the demand for interactive one-off tools under the paradigm of a traditional release structure. If you come up with two releases a year you can't come near keeping up with what these guys are demanding. So the SDK is going to provide a way for us to really open things up completely so gamers can produce their own tools. In doing so we'll be levering a lot of the internal tools from Microsoft.'

'I guess our long-term goal is to make it a hybrid environment for both programmers and animators,' says **Gareth Morgan** from the same team. 'The engineering resources of a software development company can bring the logic and the tools they need to the system to assist the animators.'

Version 3.5 is currently available for the Silicon Graphics





The French 'Buf Compagnie' created the majority of effects in The City of Lost Children (see page 28). They created this flea (above) entirely within *SoftImage* and introduced it into a real life film setting. For game developers, *SoftImage 3.5* includes features such as polygon and colour reduction, texture editing and support for popular game platforms (middle left). With its advanced features and programming environment, Mental Ray is poised to become possibly the new industry standard



platform with versions for Intel Pentium Pro, Alpha and MIPS R4400 based workstations for *Windows NT* scheduled for August. The approximate price for *SoftImage 3D 3.5* is $7,995 while for the souped-up *SoftImage 3D Extreme 3.5* (which includes meta-clay model-sculpting features, an enhanced particle animation system and a further refined version of the Mental Ray distributed renderer) the price rises to $13,995.

At E[3] SoftImage also demo'ed one of the reasons Microsoft acquired the company two years ago. The product, called *Digital Studio*, has so far been four years in development and the company is convinced that it's nothing short of revolutionary.

The whole concept behind *DS* is integration. At present, there are between five and ten applications that everyone uses to create multimedia content: 3D tools, paint tools, compositing tools, etc. Moving between them entails different types of file conversions which can not only be cumbersome but also time consuming. *DS* is being designed to provide all the tools in one environment and to furnish a complete end-to-end solution.

'Imagine you have a bunch of vertical processes or applications. These are inherently incompatible solutions and there are ways of moving data around them,' explains UK MD **John McQueen**. 'You could come up with yet another file format to seamlessly take this to that or you could come up with an interface, which a lot of people do to make them look the same. A lot of the solutions have taken the Apple feel - use a similar data structure to take data in and out of packages and similar application UIs so they look and feel the same, but for me that's not integration, it's still simply moving data around.

'We believe that non-linear editing, compositing, sound, paint, 3D and whatever other vertical tool sets should be, and can be, integrated into one architecture. We believe you should be able to keep the data - the project - in one place and bring whatever damn tool you need to that.'

Gareth Morgan: 'As the content and the media involved in computer games becomes more sophisticated we shall see a lot more linear video media being used in games - in intro sequences, cut scenes and so on, requiring far more high-quality compositing. So, as far as the interactive market goes, *Digital Studio* offers the ability to fully integrate that kind of linear content management tool with the 3D tools. Within *DS* we're able to bring in *SoftImage* scenes and render them with Mental Ray on the same editing platform, on the same user interface as normal D1 video.'

With *DS* destined for deployment on *Windows NT*, *SoftImage* has been able to take advantage of its access to the operating system to continue the open-architecture philosophy illustrated by *SoftImage 3D*. Much of the code of the various vertical routines used in the industry is shared between applications and the company has sunk that portion directly into *NT*. This basically creates a set of APIs, referred to as the New Media Layer, into which Soft can then seamlessly plug their own applications, as can any other developer.

Currently undergoing beta testing at the moment - *Digital Studio* is expected to be released before the end of 1996 - no pricing structure has yet been finalised. **Edge** understands, though, that the complete package should cost around $80,000.

REBOOT tm © 199
Mainframe Joint Ventur

The first 100% computer animated TV series, Reboot is fully rendered in *SoftImage* (above). *SoftImage* includes more than 100Mb of human motion captured data that can be used for animating characters and scenes (middle left). An advanced particle system allows *SoftImage 3.5* users to easily create challenging visual effects such as hair, fire, tree leaves, and smoke (below left). A *SoftImage*-rendered image of Digital Domain's forthcoming game, *Ted Shred* (below right)





Sega's amusement machine department #3 has pushed 3D fighting games to the extreme with *Last Bronx*. Plus, Namco gives *Xevious* a new lick of paint and Sega enters the olympic arena

Last Bronx





Along with offering more varied gameplay than *VF2*, AM3 also hopes to have AM2's title licked visually thanks to its use of the Model 2b board





AM3's Noboyuki Yamashita (top) and Akinobu Abe (above)

Sega's collective penchant for videogames simulating violence is seemingly never ending. Its latest, *Last Bronx*, is currently nearing completion at the company's Tokyo HQ. **Edge** visited the team behind the project, AM3, for fighting talk with the game's director, **Akinobu Abe**, its planner, **Noboyuki Yamashita**, and its public relations officer, **Norimasa Yatsuzuka**.

Edge What influenced your decision to make a game such as *Last Bronx*?

AA We wanted to make a fighting game and at that time there were games such as *Virtua Fighter*, *Tekken* and *Street Fighter II* around. So we wanted a new concept and that meant including weapons. We also wanted a special location – we used Tokyo as a model to serve as a backdrop to the action.

Edge What are *Last Bronx*' strong points?

AA We've succeeded in making weapons move very realistically. Because we're using weapons of different lengths it was difficult to get a good balance in the game. But we've managed to achieve a playable game. We'll also have nice projectiles, and players will be able to roll in order to make attacks more effective. Most importantly, we've included a special feature in the game. Usually when you want to punch your enemy, you push the punch button and the motion is completed. However, in *Last Bronx*, when you're doing an attack, you can stop mid-move and perform another one straight away. It's kind of a dummy technique.

Edge What weapons can be used?

AA We used a mixture of modern and traditional Chinese and Japanese weapons. You will be able to use a bo (a wooden Japanese sword), a battle stick, a sai (a traditional short Japanese weapon having a 'U' shape, used during katana fights), and a nunchaku or a sansetsu-pon (three linked pieces of wooden stick). With the modern weapons, you'll be able to use a kind of nightstick, the same kind of stick used by American police, and a good old hammer. We used a mix of short and long weapons so every type of fighter would be satisfied.

Edge Did you use motion-capture?

NY Yes, as **Edge** mentioned in its previous article, we used some optical techniques to achieve the bigger motions.





***Last Bronx*'s graphics are currently about 80% complete; the game approximately 60%. AM3 is presently tweaking its special attacks**

Developer:	AM3
UK Release:	TBA
Origin:	Japan

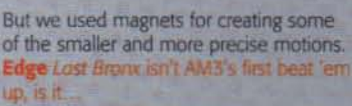




The team assembled to create *Last Bronx*'s eight distinctive characters include approximately half of the original *Virtua Fighter 2* team. Director Akinobu Abe previously worked on Sega's *Star Wars* coin-op



As well as using their weapons, fighters are also able to use traditional martial arts such as Aikido and Ju-jitsu in *Last Bronx*



But we used magnets for creating some of the smaller and more precise motions.

Edge *Last Bronx* isn't AM3's first beat 'em up, is it...

AA No, AM3's first fighting game was *Dark Age*. But it was a 2D bitmap game.

NY In fact after *Dark Age*, there was *Dragon Ball Versus*, *Virtual-On* and then *Funky Head Boxers*. *Dragon Ball Versus* was the first 3D polygon game AM3 did.

AA So you could say *Last Bronx* is the second from our department.

Edge Both AM2 and AM3 are currently working on fighting games. Does this cause problems?

AA AM2 did *Virtua Fighter*, *Fighting Vipers* and *Virtua Kids*. Afterwards we created *Last Bronx*. From an external point of view, the release dates are very different. Moreover, we're not doing the same kind of fighting game – *Last Bronx* uses weapons. Release schedules are very tight and games are released regularly and consecutively by AM2 or AM3. We also try to release a game to revive interest in that genre – *Virtua Fighter 2* was timed to revive the *VF* games, for example.

NY Also, a game like *Fighting Vipers* is very characteristic of AM2. When AM3 releases a game it too has its own mark and particularities. In that sense it can only be good for the player.

Edge When you did *Last Bronx* did you think about a Saturn version ?

NY Not at all [laughs]. Our main concern was to master the Model 2 board to realise our game. So it was difficult for us to think about the Saturn version.

Edge If there were no technical limits what kind of game would you do?

AA Simply speaking, we could use more complex weapons. But we're already very satisfied with our characters' movements.

NY Of course, we can't say the motion of our weapons is perfect – you can always improve things. For example, in the present version a character is using a nunchaku. Without technical limits we would be able to make some more variations for its movement – control it from one hand to another and use it to block, for example.

Edge Does Last Bronx use the same number of moves as *Virtua Fighter 2*?

AA If you count all the punches, kicks and special moves of *VF2*, it has more. But *Virtua Fighter 2* has ten characters, and Last Bronx has only eight. So you could say that for one character the number of techniques should be similar.

NY Some games use the same techniques for more than one character, such as two characters could use one punch. Because we're using weapons we had to give each character unique moves.

AA Each of our characters has a punch attack, but each punch is different. So the total number of moves is very high.

Edge Why did you use Tokyo as a model for the backgrounds ?

AA Many games use far-off places like India, America or China. But we wanted to use a place familiar to the public here.

NY The places used in the game only resemble famous Tokyo areas, though. One place is reminiscent of Shibuya, a popular shopping district in Japan. Also, in order to capture the flavour of Tokyo we included about 30 sponsors' logos in the game. We also included logos of famous Japanese magazines, like Gamest and Famitsu.




Each fighter wields his/her own unique weapon, ranging from simple wooden stick-like arrangements (left) to hefty wooden mallets (right)



Continued next page

Xevious 3D/G

Thirteen years since the release of the original *Xevious* comes a 3D version, made possible by Namco's System 11, PlayStation-compatible, technology.

Instead of offering the straightforward missile-and-bomb munitions of the original, *Xevious 3D/G* allows you to use three new types of weapon, attained by collecting coloured capsules – blue (the Dios weapon) splits your fire into four directions; green (Gelmac) endows your craft with a wide laser beam; and red (Doct) gives you a wire-like beam which locks on to enemies.

Although its backdrops give a fair impression of 3D, ground detail is actually achieved using a flat texture map. Standard enemy characters are flat sprites, too, but boss characters are rendered in full, animated polygon form.

Despite its all-new presentation, *Xevious 3D/G* offers little more than average gameplay. Namco will surely be hoping that the *Xevious* brand is still strong enough today to earn its machine any attention.

***Xevious 3D/G*'s weaponry is a far cry from that of the original game. Especially worthy of note is the wire-like 'Doct' laser (above right)**





The first of the seven levels in *X3D/G* (above) is quite faithful to that of the original game



Developer:	Namco
UK Release:	TBA
Origin:	Japan

Gunblade





***Gunblade*'s designers actually visited New York to make sketches during its design**

In an interesting twist on the *Virtua Cop* theme, Sega's latest lightgun-based shoot 'em up casts the player in the role of a helicopter-flying, machine-gun-wielding police officer.

Your airborne nature ensures that the action is dramatic and varied, swooping around Time Square one moment, buzzing around the United Nations building the next. AM3 have packed the game with set pieces (such as a encounter with an aircraft carrier) in an effort to ensure the game avoids monotony – a common bugbear of games of its type.

Perhaps the most impressive part of *Gunblade*, however, is the behaviour of the villains whose trails you are tracking. Each has a degree of artificial intelligence allowing them to dodge your bullets or even get up and run away after taking a non-lethal hit.

Because *Gunblade*'s weaponry is cabinet mounted its gameplay is less demanding than the likes of the *V-Cop* series, whose free-moving pistols require more accurate wielding. It's a more exciting game as a result: spitting bullets into a troupe of bad guys with scant regard for wasting ammunition is great.

Namco's excellent *Time Crisis* still reigns supreme in this genre, but *Gunblade*'s all-out assault will push it right to the wire.





Gunblade* has its work cut out to beat Namco's excellent first person shooter, *Time Crisis

Developer:	Sega/AM3
UK Release:	TBA
Origin:	Japan







The potential of playing from a helicopter is well realised, with encounters in open spaces (above left), high-speed car chases (above right), and battles on crowded city streets. A *V-Cop*-style targeting system appears throughout

Decathlete

A M3's second attempt to give Sega's ST-V technology a workout has manifested in a *Track & Field*-style sports package, presented in a full polygon environment.

The ten events available hold true to the real-world decathlon (1,500m, sprint, javelin, etc) to provide variety enough to please arcade-going would-be athletes.

Decathlete's gameplay follows the guidelines laid out 13 years ago: hammer buttons to gain speed (or power) and use of an action button to either jump or launch a projectile. Unlike *International Track & Field*, however, *Decathlete* allows you to use just one power button – not two in strict sequence – making it more accessible to gamers of that inclination.

The game's use of the Saturn's hi-res mode at 60fps gives it an immediate visual edge over Konami's title, but it lacks the motion-captured finesse of *Track & Field*. Its wildly varied characters – with their kooky animations – generate an altogether more relaxed and comical feel, though, which is more in keeping with the flavour of Konami's original sports titles.

A Saturn translation is nearing completion, including several features to boost the home version's longevity. The arcade is perhaps *Decathlete*'s more ideal home, however, and it's there that it's likely to be a considerable hit.

Sega has opted for the traditional ten decathlon events, rather than oddball novelties







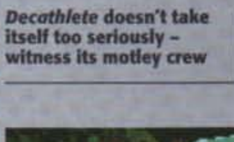



***Decathlete*'s camera is even more active than *International Track & Field*'s – its movement sequences frequently change to give variety**









***Decathlete* doesn't take itself too seriously – witness its motley crew**

Developer:	Sega/AM3
UK Release:	TBA
Origin:	Japan

Dunk Mania






Executing one of a wide range of special joystick/button combinations allows you to perform outlandish dunk attempts (above centre). *Mania* faces extreme competition in the basketball-saturated home market

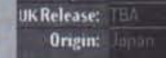
N amco's System 11 series of coin-ops moves in to the sporting field with a basketball simulation which emphasises the fast-paced and dynamic nature of the American game.

Myriad camera angles heighten the action, which allows players to perform a wide variety of moves, from simple dunks to one-handers to 360° jams – the more spectacular of which being accompanied by swish graphical effects and atmospheric commentary.

In the competitive coin-op world *Dunk Mania* will not be without rivals. The impending PlayStation conversion, however, will have an even tougher time in the crowded home market.



Pre-rendered footage is always eye-catching



Developer:	Namco
UK Release:	TBA
Origin:	Japan

Irem releases a retropack, but it's not quite so generous on the quantity, or quality

Irem Arcade Classics

Sega Ages

Sega has announced the content and release dates of its Saturn series of conversions of some of its old coin-ops, *Sega Ages*.

Contrary to previous reports, each game will be released separately in Japan, not as a compilation. 3D shoot 'em up *Space Harrier* will arrive in July, shallow but attractive jet-plane blaster *Afterburner* in August, and seminal driving game *Out Run* (Saturn screen, below) in October. Two other CDs consisting of collections of obscure Sega puzzle titles also figure in the *Ages* range – one is already in Japan while another is set for release towards the end of the year.

Developed by a band of die-hard Sega coders, the Saturn versions are promised to be nigh-on arcade quality in their appearance.

There are no firm plans for *Sega Ages*' release in the UK, although Sega aims at putting together a compilation disc for the European market in time for Christmas.













Irem's retro debut (via Japanese publisher Imax) reminds how crude most mid eighties coin-ops were: *10-Yard Fight* (left), *Spartan X* (aka *Kung Fu Master*)

There seems to be a law of diminishing returns operating in the world of retrogaming. As publishers realise the lucrative nature of the market – in Japan at least – releases are getting less and less generous. After Namco's six-games-at-a-time *Museum* discs full of classics, both the quality and quantity of new retro packages is downsizing dramatically. (Sega's forthcoming attempt to flog *Afterburner* on its own in 1996 smelling particularly bad). *Irem Arcade Classics* is a perfect example.

Edge reckons that if you were to stop anything up to 25,000 games players in the street and ask them to name an Irem arcade classic, the first (and quite possibly only) name you'd hear from every one would be *R-Type*. The ground-breaking shoot 'em up, however, doesn't feature on this collection, making way for *Spartan X*, *10-Yard Fight* and *Zippy Race*, all three of which were often known to make gamers exclaim, 'What? Zippy who? Eh?'

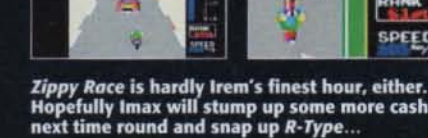
Spartan X is the only game which most UK gamers are likely to recall, albeit under a different title (*Kung Fu Master*). The grandfather of the scrolling beat 'em up genre which became popular with the likes of *Final Fight*, *Spartan X* is a fast-moving and very tough reaction-tester of which very little is said when it's revealed to be the best game here.

10-Yard Fight was the first real coin-op American Football game and the combination of a first attempt, the restrictions of arcade controllers, and the outrageous dullness of the sport itself makes the game every bit as forgettable as you might imagine.

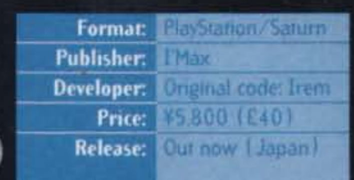
Zippy Race is a strange motorbike road racer, viewed from overhead until an entirely gratuitous and rather tatty-looking into-the-screen section at the end of each stage. Later things get a bit more interesting on dirt tracks strewn with rubble, obstacles, jumps and tempting bonuses, but it's sluggish and superficial.

All the games come with the coin-op dipswitch options and so on (rather more elegantly implemented than the Namco titles), but there's no background, no history and very little to set *Irem Arcade Classics* out as anything other than a curio for collectors only.





***Zippy Race* is hardly Irem's finest hour, either. Hopefully Imax will stump up some more cash next time round and snap up *R-Type*...**



Format:	PlayStation/Saturn
Publisher:	I'Max
Developer:	Original code: Irem
Price:	¥5,800 (£40)
Release:	Out now (Japan)

Bubble Bobble Collection

Bubble Bobble and *Rainbow Islands*, two of coin-op history's most lauded platform games, are coming together on a compilation pack from Acclaim.

Developer Graftgold is handling the *Rainbow Islands*' half of the deal (following its superlative Amiga conversion) while Probe is working on the conversion of the original game.

The pack is due in August for the PC and PlayStation.







Namco Museum Vol.4

So far, Namco's excursions into its back catalogue have had mixed results. Apart from sturdy classics such as *Pac-Man*, *Galaga*, *Rally X* and the arrival of *Galaxian* on *Volume 3* (see next month), few titles have genuinely proved worth the trip back in time. Fortunately, the fourth compilation includes a more diverse and rather more contemporary band of coin-op conversions.

Technically, the inclusion of *Assault* and *Ordyne* present a far greater major challenge to Namco's programmers. Introduced during 1988, these were the first coin-ops to include full rotation and the scaling of backgrounds and sprites (the Super Famicom debuted two years later with only background manipulation possible in hardware). *Assault* is a stunning top-view tank game with the novelty that the screen rotated around the tank, while *Ordyne* is a cutesy side-scrolling shoot 'em up with some beautiful graduated colour schemes and some great use of screen rotation. An excellent version made it to the PC Engine (obviously with most of the special effects severely compromised) but even the PlayStation could experience some technical difficulties maintaining the original's visual gloss.



Ordyne was a technically outstanding shoot 'em up in its day. _Pac-Land_ is just plain, simple fun

Another highlight on volume four is the seminal *Pac-Land* - a side-scrolling platform game from 1984 in the mould of *Wonderboy*. Again, only the PC Engine has done this title justice so far. The other games on the compilation include the more obscure *Return of Ishtar* and a samurai game, the name of which escapes **Edge**. Expect more information on this promising collection as it emerges from Japan.



Assault keeps the player's tank fixed while the screen smoothly rotates and scales around it

Format:	PlayStation
Publisher:	Namco
Developer:	In-house
Price:	¥5,800 (£40)
Release:	TBA (Japan)

Super Pang Collection

Mitchell Corporation's *Pang* series is one of videogaming's unsung success stories, but Capcom's decision to deliver conversions of the three coin-ops together on one PlayStation or Saturn disc could see it earn due recognition.

The first game of the trilogy, *Pomping World* (known simply as *Pang* in the west), was released in 1989 and set out the framework for the series: your character stands at the foot of the screen and attempts to shoot bouncing bubbles into smaller and smaller bubbles until finally they burst and the level is cleared. Each of the 50 or so stages represents a country of the world and its backdrops carry a distinctive landmark or feature of that territory.

Super Pang, released as a coin-op in 1990, followed more or less the same pattern, but added different power-ups and introduced a 'Panic' mode (where you simply attempt to burst as many bubbles as possible, without a proper level structure), while the last game, *Pang 3*, from 1995, used famous paintings as backdrops on which to throw the action.

The only differences between the coin-op and home versions is Capcom's addition of a mode aimed at those who have never played *Pang* before. The series' timeless playability and addictive qualities would seem to make such a mode extraneous, however.







Capcom's first retro collection includes _Pang_ (top left), _Super Pang_ (above) and _Pang 3_

Thunder Force Gold

Saturn-owning shoot 'em up fans can look forward to two new packs which showcase Technosoft's once-popular *Thunder Force* series, which appeared originally in both coin-op and Mega Drive guises.

Arriving in Japan in two volumes – a release date is yet to be set – the first will include the above-viewed *Thunder Force II* and the more graphically extravagant *Thunder Force III*, a side-viewed affair, while the second will include the final instalment in two different guises.











Letters

Express yourself in **Edge**. Write to: **Edge** letters, 30 Monmouth Street, Bath, Avon BA1 2BW

So **Edge** is now only only reviewing 'games worthy of our attention' (**E**33). Does this mean we'll only be allowed to read good reviews from now on?

If so, why did you devote a two-page spread to a four-out-of-ten review of 3DO *Foes of Ali* (**E**30) but choose not to cover *Battlesport* for the same system – other than dismiss it as 'very lacking'? Surely, by your reckoning, both games should have been ignored completely.

Still, it's nice to see you've put together a prescreen of *Ballblazer Champions*, LucasArts' new PlayStation title. 'Two players go head to head, attempting to "catch" a ball which is then shot into the opponent's goal.' Isn't that what *Battlesport* – awarded five stars by your sister magazine, Next Generation – is all about?

Perhaps you'll give the game a fairer hearing when it gets released on the PlayStation later this year – assuming it's good enough for you.

Justin Venville,
Hong Kong

Foes Of Ali was given coverage partly because its subject matter – boxing presented in a 3D polygon environment – was a bolstering one, with similar games appearing on other 32bit consoles at the time. *Battlesport* didn't, chiefly because it wasn't made available for examination.

Only a fool would expect any multiformat magazine's coverage to be able to cater for every strand of gamer. But **Edge** is currently in the process of rethinking its approach to Testscreen, and hopes the changes implemented in the coming months will go some way to addressing the needs of a wider spectrum.

In your preview of *Destiny* (**E**33) you state that the decision to do away with a turn-based system forces the player 'to deal with everything in a realistic time frame'. In other words, things which in the game world are supposed to be taking place over a period of years have to be dealt with by the player in seconds – and you call this realistic? A game in which the player takes on the role of general should give the player the right time frame in which to think. A jet pilot makes his decisions in split seconds, but a general has enough time to call a staff meeting if he wants one.

The point of strategic games should be to reward careful planning and well thought-out strategy, not frantic mouse clicking. The trouble in the past has often been that games companies have been so accustomed to 'action' games that they try and force action into strategy games in a way that spoils any intellectual pleasure the game might have offered.

While it might be an interesting exercise to play a game of chess without the turn structure, with each player moving his pieces as fast and as often as he liked, I doubt if it would really improve the game.

Roger Musson,
r.musson@bgs.ac.uk

By stating that *Destiny* players will have 'to deal with everything in a realistic time frame' **Edge** was not suggesting such an approach was better, or worse, than the more traditional, turn-based method.

It's interesting to note, however, that the most popular strategy game in recent years (Westwood Studios' *Command & Conquer*) uses a realtime approach, and its gameplay has carved out a niche whose popularity is set to mimic that of such world-beating turn-based titles as *Civilization*.



Modern games such as *Dawn of Darkness* place heavy emphasis on keyboard control. But what about disabled players, says Mark Rogers

Although I don't regularly read **Edge**, I borrowed the March 96 issue off a friend as it looked quite interesting. Whilst I'm impressed with your thorough and in-depth knowledge of games consoles and PCs I am less impressed with your rather assumed 'knowledge' of the Acorn RISC machines.

In response to Angel of Swansea's letter on page 15 you

replied that the Archimedes was an 'aging relic of the eighties'. I can only think that you are referring to the early computers such as the A305 and A310 that are, of course, now out of date. After all, what computer that was state-of-the-art in 1987 isn't? However, the tone of your reply leaned towards the suggestion that the entire range of Acorn's computers are relics and simply not worth bothering with.

Perhaps you would like to read up on the technology that Acorn and its sister companies have available. The recent ARM/Digital venture has created the StrongARM processor which is running at around 230MHz - easily outperforming a Pentium and for a fraction of the cost and power. The NC project looks like it is going ahead and the NC box that Oracle have up and running is actually based around the ARM7500 chip which also provides the basis for Acorn's A7000 computer.

What surprised me most was the article on pages 20 and 21 of the same issue. Having earlier said that the Acorn was a relic, you then did a complete two-page spread on how Eidos have created MPEG-beating video technology. Perhaps you failed to notice that the screenshots were taken from an Acorn computer? Screenshots in your magazine should perhaps be updated. The picture that you carried next to Angel's letter is of the A3010 which was withdrawn from sale over a year ago.

Maybe you would like to try one of the latest computers from the Acorn Computer Group and see exactly what they are capable of instead of basing your replies around your own ideas that are, in this case, aging relics of the eighties and blatantly incorrect.

Tim Wiser, Oxford

I have recently finished reading **Edge** 32 and am extremely upset. I am referring to the 'Ocean View' feature on page 58.

Being a great fan of *Doom* I was dismayed to discover a number of similar games are to be released that I will be unable to play: most notably *Terra Nova*, *Dawn of Darkness* and *Quake*, all for the PC.

The reason I will be unable to play any of these games is down to the control method. It may be perfectly simple for an able-bodied person to get to grips with the dual mouse/keyboard setup that so many developers seem to be adopting, but for a disabled person such as myself, this proves to be an impossibility.

Please do not misunderstand me - I have made an attempt to get used to this control method via *Terminator: Future Shock*. Unfortunately, after nearly a week of frustration, I gave up trying to get to grips with the controls.

It is my opinion that, although not intentionally, the industry is biased toward those people able to use both hands effectively.

Mark A Rogers, Preston, Lancashire

Edge agrees with your opinion, but would suggest that such oversights are merely indicative of the relatively immature nature of the videogaming industry in general, not an intention to alienate specific sectors of the videogaming community.

Certainly, there have been very few notable mainstream control devices specifically aimed at gamers not able to use both hands practically (a controller which placed all traditional SNES joypad controls within easy access of the fingers of one hand being perhaps the only example in the console gaming world).

Perhaps game publishers would like to respond via these pages...

After reading reviews of *Grand Prix 2* in **E**31 (April), and in other magazines even earlier, ie March, I have become very confused and perhaps a little annoyed. With all the aforementioned reviews stating release dates of March (in the case of **Edge**) and/or April, why is it that the game is seemingly unavailable to everyone, except the reviewers (who clearly had perfect copies of the product!)

As if the disappearance of this patently excellent game was not enough, I have even seen official MicroProse advertisements in magazines, boldly saying that the game is 'available'. If this is the case, then where is it? I offer one explanation - it would appear that MicroProse is a company rife with disorganisation and confusion. Evidence for this was uncovered when I phoned them to ask about the advertisements, which clearly mislead the general public. The phone operator denied the existence of any advertisements, and even asked where I had seen them, adopting challenging, disbelieving tones. Any company that places advertisements unknowingly, and seemingly randomly, without informing its telephone operators (who were not particularly helpful, anyway) is not doing much to help its image or its relations with the public.

Edge, being the leading interactive entertainment magazine is, I believe, in a position to conduct suitable enquiries. On behalf of thousands of people (and I am certain there are thousands) who have been misled, annoyed and perplexed, I ask **Edge** to take up this challenge.

Nicholas Witcomb, Church Crookham, Fleet

When confronted with your claims, MicroProse's official line was this: 'Geoff Crammond and his development team have spent the best part of three years developing what is, without question, the most accurate simulation of grand prix racing possible on current personal computing hardware.

MicroProse has supported Geoff and his team at every point of this development process, granting him more time and resources at every point and delaying the release so that the quality of the end product would never be compromised.

At many times over the past six months we have been in possession of beta versions of the game which most other publishers would have considered to be of a publishable quality. However, we are in complete agreement with Geoff that the game should not be released until it is as close to perfect as currently possible.

We understand this delay has been frustrating for the millions of computer users worldwide who have been desperate to experience *Grand Prix 2* for themselves. However, we genuinely believe the end result will justify our decision.' Nothing like invited corporate responses, is there?



Although Geoff Crammond's superb *GP2* has been reviewed by games mags, MicroProse still deny it's existence, moans Nicholas Witcomb

Continued next page

Continued

Would anybody out there like to spend all day simply having a debate on which is best, the PlayStation or Saturn? No thank you.

Looking at the games for both systems, it seems we are to be bombarded with *Tekken* and *VF* rip-offs, not to forget *Doom* clones and, of course, that eternal gaming sport, football.

Will anybody ever come up with something new? Before I owned a PlayStation I owned a Saturn - one guess why I swapped over. When Nintendo finally releases its 64bit system I will be swapping over again. At last I will be able to play what you call real videogames with high longevity.

But what will the next systems be like? Will EA do a revamped version of *Road Rash* or will it be *FIFA Soccer 98*? Will Sega do a revamped *Panzer Dragoon* and maybe something like *Super Sega Rally Championship*? Will Sony... I think you get the picture.

At the end of the day you must agree that the videogames companies have simply run out of new ideas for games. The industry is going around in circles. Anyone for a game of *Mortal Kombat 4*? Yes please!

Gary Osborne, Hemlington, Middlesbrough

At present the PC market certainly appears to be the most fertile ground for original products, so perhaps you should think about investing in computer rather than console technology when you come to buy your next games system.

The console market is traditionally not very welcoming to brave new concepts, and console owners must surely be growing accustomed to a diet of similarly styled products by now. That's not to excuse lack of innovation in the console game market for a moment, though, and there's every danger that more gamers will form the opinion that you have reached, and look to Nintendo to provide conceptually advanced games. Sega and Sony have a battle on their hands, and it's not just the technical superiority of Nintendo's hardware that ensures it every chance of success.



N64 – the last bastion of hope for videogaming, or another receptacle for crummy titles from companies short of ideas, asks Gary Osborne

In reference to Chris Crawford's article in the June issue (E33), where he estimates videogames only penetrate about 10% of the 'installed userbase of perhaps a million machines' of PCs, he should not be equating the installed base with the market.

At best, the amount of computers in homes gives an indication of the number of people who can run particular software; further data is needed to establish whether these are people who want to buy games.

The market can only be the set which includes people who have a home PC and who want to buy/play games. The fact that the percentage of people with home computers that buy games has dropped since the eighties might suggest that the home computer industry has matured, and either people have found more interesting things to do with their computers than play games, or that people buying home computers these days are not buying them because they want to play games.

Ruth Gates, Boosey & Hawkes, London

Of course, it doesn't get away from the fact that, in the past, games publishers have enjoyed greater penetration with their products than those working in the same areas today (whatever the actual figures are), but, granted, you make a fair and just point.

As pointed out by Chris Crawford in his gaming essay entitled 'Hollywood envy' (E32), the videogame industry aims to homologate its production to the 'Hollywood formula', but I believe that behind this behaviour lies the understandable intent to increase the market audience to the levels of those regarding the other forms of domestic electronic entertainment (TV, hi-fi, etc).

In this letter I wish to explain why this goal is unreachable. First, the installed base of consoles (the real unit of measure for the extension of this market) tends to 'reset' itself rhythmically without actually expanding. Every new successful console realised, indeed, doesn't add to the previous, but replaces it due to the software incompatibility. Thus, if you are going to play the 'new generation videogame' you have to conform to the latest hardware standard. On the contrary, a videotape player made in 1985 can easily play both an old black-and-white movie and the latest SGI extravaganza.

Second, once the videogame player turns 18 it's like 'get lost, we don't need you anymore,' said Crawford in his interview (E29), talking about the poor industry consideration of a mature audience. This isn't only a 'lost business opportunity', it's also a lost market (installed base) expansion opportunity. As the audience grows up, the industry turns its attention to the 'new-entries', the teenagers and then, again, resets the market. In this situation the only hope for a market expansion lies in a demographical increase... which is absurd!

Marcello Cangialosi, Taranto, Italy

It amazes me that for a magazine which is supposed to reflect an industry that relies so heavily on consumer confidence, **Edge** seems determined to highlight both real and (worse) supposed deficiencies in almost every single machine available.

First it was the pathetic coverage you gave to the UK Saturn release, including a rather unfair criticism of Sega's decision to bring forward the release date (a decision many feel *ensured* its survival). I among others wondered where the glossy sales book which accompanied your magazine following the release of the 3DO and Jaguar was. (Just because Sega refused to pay for one doesn't mean it wouldn't have been well received.)

Then came a rather uninspiring period in which it

became apparent that Sony had become **Edge**'s preferred supplier. (If the Compuserve Vidgames forum is anything to go by, I'm not the only one to believe such a statement.)

More recently, and possibly the most annoyingly, is your attempt to get behind the scenes of so-called major software houses, who it would seem are either more interested in criticising hardware manufacturers of opposing camps than sharing any real industry news. Your latest Psygnosis 'interview' is a point in question. Rather than explaining the reason why Psygnosis allowed a poor version of *Destruction Derby* to reach the shelves, we are told instead that the Saturn is not the favourite machine on site - a piece of information that no doubt pleases Sony, but doesn't do much for we games players who are wondering whether any more titles from Psygnosis will be as lacking as *DD*. Indeed, for those of us who have been disappointed with *Adidas Power Soccer*, there is no explanation or questioning regards the numerous bugs/features found within the game.

We are now led to believe (**E**33) that game programmers are abandoning the dedicated games console (a format, incidentally, which is favoured by most of the people who really matter - the games players), and concentrating their talents on the high-performance PC market.

If programmers feel restricted or mechanised by writing for consoles, tough. I simply can't accept that their creative integrity is being compromised by having to write for a dedicated machine.

The emergence of titles such as *Transport Tycoon*, *Sim Tower* and *EF2000* prove there is a huge market for complicated and structured games, but there is no suggestion that the current wave of 32bit consoles will be unable to handle such games.

The suggestion in your reply to P Patel's letter in **E**33, that the new wave of video boards will surpass the video imagery achievable on 32bit consoles, is obvious, but I doubt that such cards will ever be standard in the home studies or small offices which house the vast majority of today's PCs.

Sure, the PC games market is huge, but that is more to do with the number of publishers who can access the market. We all know the PC is far more programmable than, say, the Saturn, and many, if not all, new software houses dip their toes in the PC market before reaping their profits in the more lucrative console one.

It seems hypocritical for the likes of Psygnosis to bemoan the format which has made it a worldwide name, and to suggest that it was consoles that introduced the formulaic game is a damn travesty. Indeed it seems rather immature of Psygnosis to sign up with Sony, a move which would overnight give it the mass market it obviously craved, and then to complain about the banality of pandering to that same market.

Scott Colebourn,
Middlewich, Cheshire

First, **Edge** does not have a preferred supplier.

Company profiles are not intended to provide 'real industry news': their purpose is to provide an insight into the workings and plans of developers whose products are worth looking at in more than surface detail.

How can you level your beef about Psygnosis' plans at **Edge**? It is merely reporting views, not necessarily supporting or reinforcing them.

Of course the new wave of video boards will eventually be adopted by a large number of PC users. Once upon a time, people talked about Pentium processors not having the potential to permeate the mass market - look at the situation now.

Ultimately, your views boil down to those of a console owner who feels threatened by the inevitable emergence of the PC as a mainstream gaming platform. **Edge** suggests that you simply enjoy the format(s) to which you have access and not get caught up in such petty quibbling.

Q and A

Rely on Edge to cut through the technobabble. Write to Q&A, Edge, 30 Monmouth Street, Bath, BA1 2BW

Q 1 Being an ex-Neo Geo owner I was pleased to hear about SNK planning to bring its games to the PlayStation. But after reading your news story about *KOF '95* being available in the form of a cartridge and CD combination for the Saturn, I am concerned about the PlayStation version, since it has less internal RAM than the Saturn. Is SNK developing a similar system for the PlayStation?
2 Will the *X-Men* be available on the PlayStation in the near future?
3 What has happened to NEC's 32bit console shown in issue 11? No one seems to talk about it, nor does there seem to be any game development happening on the system.

elliotm@sbu.ac.uk



A 1 No, such a system is technically an impossibility. The PlayStation version is likely to suffer protracted loading periods, unfortunately.
2 Yes, Capcom plans a Japanese release by late summer, while Virgin is set to distribute a PAL version later in the year.
3 NEC's PC-FX is still alive and, if not exactly kicking, at least enjoying a steady trickle of software in Japan. Sadly, most of it falls into the category of animated adventure stories offering limited interaction compared to titles available on its 32bit stablemates.

Q I understand Datel is about to release an adaptor for the PlayStation. Is this true? My main reason for emailing you is because I am about to have my PSX (Japanese) converted by having the country code chip replaced inside the machine, thus allowing me to use any games from any country without any disk swapping.

Matt Horne,
be149@city.ac.uk

A As soon as any significant new hardware platform hits the market, Datel's technicians strip down its technology with a view to producing such devices. Unlike the Saturn, however, Sony's machine has so far proved uncrackable in this way, and what you've heard is pure rumour.

Q I am planning to buy an imported Nintendo 64, but I am confused as to how I'll be able to connect it to my TV, and no magazine has yet covered the subject. I currently own a US SNES and connect it to my TV via its 21-pin SCART socket.

Phil Turner,
Southampton, Hants

A Nintendo's foresight in this area will ensure an easy transition from 16bit to 64bit: the N64 uses the same multi-out socket as the SFC/SNES. However, it's not known if the RGB SCART lead works - see news for more details.

Continued Edge 35

Party time in Los Angeles



Forget the visual extravagance paraded on the E³ showfloor, the real battle between the world's largest videogame companies took place after hours at the onslaught of parties that attempted to fill the beer guts and digestive systems of the industry's partyheads. **Edge**'s intrepid reporters obviously managed to attend most (deadlines permitting) and this year's selection failed to provide many thrills.

One of the highlights for **Edge** was a brief stop-by at the Playboy party (good old CD-ROMs, eh?) which took place at Hugh Heffner's palatial mansion. After spotting the 1996 Playmate of the Year (below) **Edge**'s over-zealous photographer barged in on the crowd surrounding the silicone-pumped blonde, and while furiously snapping away and cracking a few jokes at the expense of her fat, cigar-chewing entourage, was promptly faced with threats of being thrown in the nearby pool, followed by less refreshing forms of torture from their mafioso connections. A hasty departure prevented the embarrassment of either.

Edge was better behaved at Sony's post-show soiree. Admittedly facing an incredibly tall order given that its E³ party last year was the most outlandish industry event that's ever been staged (Columbia Studios, 2,000 people, Michael Jackson, $1,000 a head, etc), this time Sony took relative solace in the expanses of LA's Flying Museum. And apart from a bland, nostalgia-tinged appearance from rusty old eighties crooners Huey Lewis and the News, it was about as exciting as, well, walking around a museum. Nil point.



Following last year's surprise appearance of **Seal** at Nintendo's E³ party, the theatrical brilliance of alternative French Canadian circus performers, Cirque du Soleil (whose show is one of the best attractions in Las Vegas), went down rather less well, with the individual performers dotted about the venue failing to impress the enthusiastic gamehead crowd. In retrospect, perhaps a party fuelled by free booze and where the topic of conversation was the Nintendo 64 was not the best time to watch contortionists tying their legs in knots.



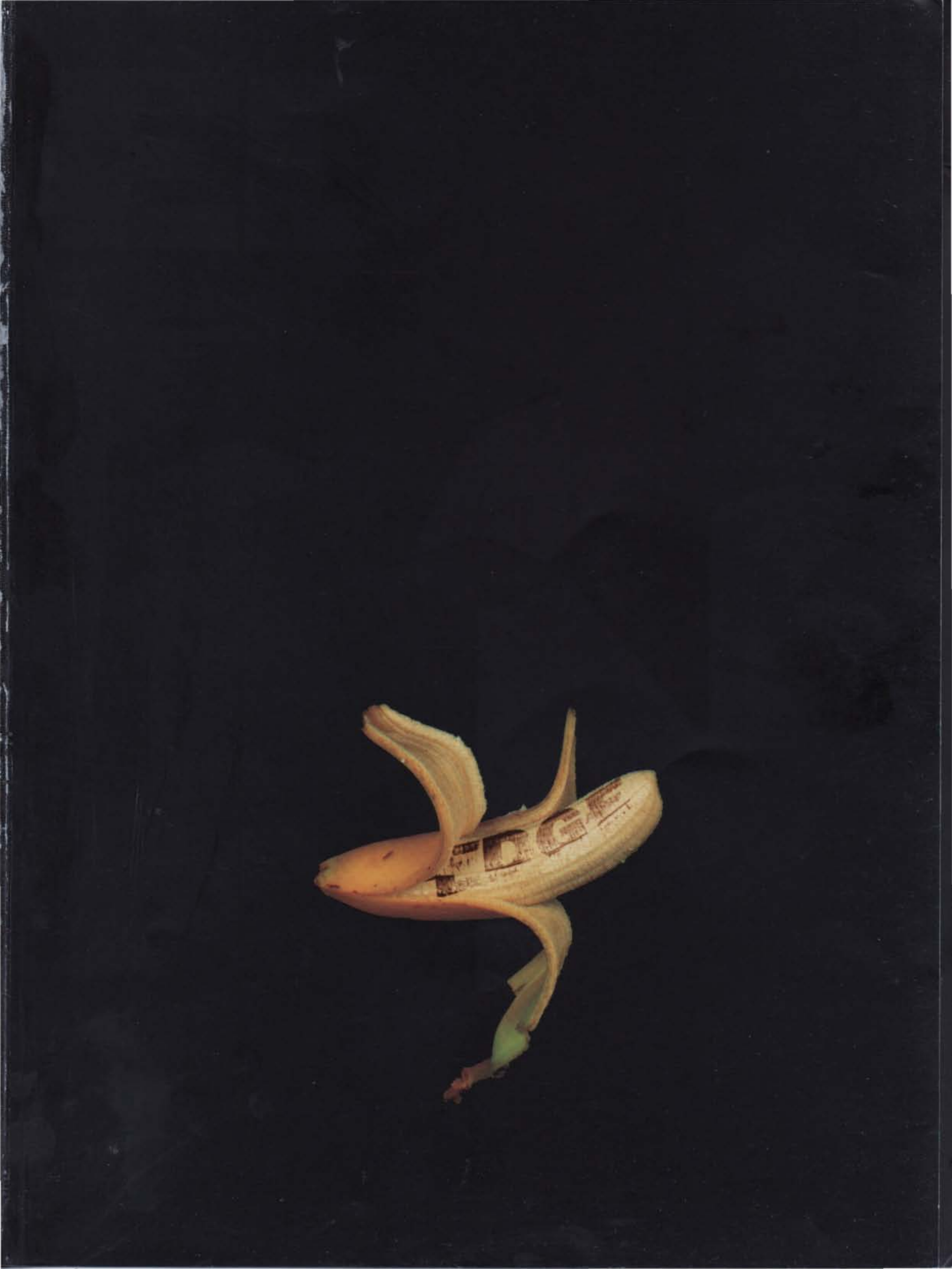
Later that night Sega's House of Blues party proved to be far more popular and kicked off with its president, **Tom K**, appearing on stage in Blues Brothers garb and brandishing a harmonica. This was a typically dashing Sega move immediately dampened by a dreary speech from its president about how Sega was close to catching up on Sony in the US market, carried along with the aid of piecharts and numerous other corporate brainwashing accessories (such as professional party poopers telling people to shut up). A brief glimpse of *Virtua Fighter 3* with a Saturn logo slapped over it was the last straw for the anti-Sega gatecrashers gnashing their teeth and choking on their Bacardi.

By far the lowest-key knees-up was held by Scavenger at renowned LA rock club Whisky-A-Go-Gos on the final evening of the show. As well as having the most impressive stand at E³ (below left) the Scandinavians clearly know how to throw a good party. With the help of an LA techno DJ (who even played some tracks by one of Scavenger's talented in-house musicians) this night was in direct contrast to the bluesey, jazzy blandness of most E³ schmoozathons.

Finally, **Edge** would like to thank Nintendo's exclusive UK distributor, THE Games, for its splendid hospitality in Los Angeles which included a trip in the 1940s 'Air Nintendo'-badged DC3 Dakota and a private dinner where guest of honour **Howard Lincoln** repeated his infamous words of 'late fall' to an expectant crowd of UK retailers...



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